



THE UNIVERSITY *of* EDINBURGH

This thesis has been submitted in fulfilment of the requirements for a postgraduate degree (e.g. PhD, MPhil, DClinPsychol) at the University of Edinburgh. Please note the following terms and conditions of use:

This work is protected by copyright and other intellectual property rights, which are retained by the thesis author, unless otherwise stated.

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author.

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author.

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

**THE RŪM SALJŪQ
ARCHITECTURE OF
ANATOLIA
1170 – 1220**

Richard Piran McClary

PhD

The University of Edinburgh

2015

DECLARATION OF OWN WORK

I declare that this thesis is my own work and has not been submitted for any other degree of professional qualification.

Signed:.....

Richard Piran McClary

February 23rd 2015

ABSTRACT

This thesis investigates the surviving architecture built in Anatolia from *circa* 1170 to 1220, a period that encompasses the rule of the Rūm Saljūq sultans Kılıç Arslān II to ‘Izz al-Dīn Kay Kāwūs I. This was the period which saw the development of a discernible Rūm Saljūq architectural aesthetic across the lands under their control. Due in part to the accident of survival, the main focus is on imperial structures, beginning with the palace kiosk of Kılıç Arslān II in Konya and ending with the hospital and tomb of ‘Izz al-Dīn Kay Kāwūs I in Sivas.

The thesis begins with a linear chronology of the various Turko-Muslim dynasties in the region, focussing primarily on the Rūm Saljūqs. This provides the historical and political context within which the corpus of buildings was created, and is based primarily on Arabic, Persian and Byzantine chronicles, augmented by the most recent scholarship.

The second chapter studies the surviving corpus of portals, along with a number of tombs, and the monumental minaret attached to the *qibla* wall of the Great Mosque in Sivas. This reveals the range of patterns and forms which were employed to create an identifiably Islamic aesthetic. The portals are all stone, while the tombs may be in brick or stone. The minaret is entirely brick-built, and the analysis of the brick and glazed tile structures demonstrates the wide ranging connections to Persianate architecture, especially the Ildegizid architecture of Nakhchivān and Marāgha.

Chapter three is divided into two sections, with the first consisting of analysis of the various constituent materials used to construct the corpus. The palace kiosk of Kılıç Arslān II in Konya is used as a case study throughout the first part of the chapter. The second section examines working methods, and concludes with a hypothesis as to the division of roles among the skilled craftsmen and semi-skilled labourers responsible for constructing the buildings under discussion.

The fourth chapter is devoted entirely to the hospital and tomb of ‘Izz al-Dīn Kay Kāwūs I in Sivas. Along with revealing hitherto unstudied decorative elements of the complex, the analysis shows that the tomb was part of the original design schema. This is in contrast to the currently accepted view of scholars that it was added after the death of ‘Izz al-Dīn Kay Kāwūs I by his brother, rival and successor, ‘Alā’ al-Dīn Kay Qubādh I. The detailed analysis of the minaret added to the Great Mosque in Sivas, along with the nearby tomb and hospital, all built during the reign of ‘Izz al-Dīn Kay Kāwūs I, suggests an increased importance of that city to the dynasty which cannot be perceived from the literary sources alone.

The thesis concludes with an overview of sultanic and royal female patronage during Rūm Saljūq rule, followed by a number of avenues for further enquiry.

AKNOWLEDGEMENTS

This work would not have been possible without the encouragement of a large number of scholars, family and friends. I could not have started along this path without the support of Heather Elgood at SOAS.

I have been given regular assistance and encouragement by my dear friend Bruce Wannell. To my supervisors, Alain George and Songül Mecit, I owe a debt of gratitude for the way they have risen to the unenviable task of guiding me through the whole process. I am most grateful to my mother, Anne McClary, for proof reading the entire thesis, and to Paul Starkey for his help with Arabic transliteration. Carole Hillenbrand and Andrew Peacock have both been very generous with their precious time and immense knowledge. By reading drafts of chapters and offering extensive insightful comments they are responsible for much that is good, while any errors remain entirely my own. I also offer my heartfelt thanks to the people of Turkey for all the help, kindness and hospitality I encountered across their vast and beautiful country.

Without the tireless support and encouragement of my father, Robin McClary, it is very unlikely that this endeavour would have been possible. This thesis is dedicated to him and to my beloved Rebecca Smith, who has motivated, inspired and endured me throughout the long process of researching and writing it.

CONTENTS

DECLARATION OF OWN WORK.....	i
ABSTRACT.....	ii
AKNOWLEDGEMENTS.....	iii
CONTENTS.....	iv
LIST OF FIGURES.....	ix
LIST OF TABLES.....	xiv
NOTES ON TRANSLITERATION.....	xv

CHAPTER I – INTRODUCTION: CONTEXT, SCOPE AND METHODOLOGY

INTRODUCTION.....	2
Scope, aims and structure.....	2
Primary research resources.....	6
Rationale for the selection of buildings.....	7
HISTORICAL CONTEXT.....	9
The origins of the Saljūqs and their arrival in Anatolia.....	9
Muslim rule of Anatolia to 551/1156.....	11
Kılıç Arslān II: Rūm Saljūq hegemony and the division of the sultanate.....	13
Succession crises and the reunification of the sultanate.....	18
The imperial ambitions of sultan ‘Izz al-Dīn Kay Kāwūs I.....	22
Conclusion.....	28
EVOLUTION OF THE STUDY OF ISLAMIC ARCHITECTURE IN ANATOLIA.....	30

CHAPTER II – TOWARDS A NEW AESTHETIC: PORTALS, TOMBS AND MINARETS

INTRODUCTION.....	35
PORTALS.....	38
Corpus overview.....	38
Analysis and comparison of portal elements.....	55
Muqarnas hoods.....	55
Roundels.....	61
Niches.....	67
Muqarnas bands over niches.....	71
Voussoirs.....	72
Framing patterns.....	74
The Konya Exception.....	77
Stereotomic strapwork.....	82
Flanking panels.....	85
Epigraphy.....	86
Elbow brackets.....	88
Conclusion.....	89
Portals: conclusion.....	91
TOMBS.....	96
Introduction.....	96
The Ildegüzid connection.....	96
Mengücek Gazi tomb, Kemah.....	100
Epigraphy.....	104
Kırk Kızlar tomb, Niksar.....	109
Brick octagon: conclusion.....	113

Melik Gazi tomb, Pinarbaşı	114
Stone tomb corpus: overview	117
Tombs conclusion	122
MINARETS	125
The Great Mosque minaret in Sivas: A case study	127
Base	130
Shaft	132
Epigraphy	133
Muqarnas	141
Subsequent developments	146
Minarets: conclusion	147
CONCLUSION	152

CHAPTER III – METHODS AND MATERIALS: THE CONSTRUCTION PROCESS IN MEDIEVAL ANATOLIA

INTRODUCTION	156
STONE	158
Stone sculpture	159
Stone pattern design and execution	162
Stone: conclusion	167
BRICK	168
Introduction	167
Brick sizes and production	170
The decorative interaction of brick and stone	174
Brick muqarnas on Rûm Saljûq buildings	175
Kiliç Arslân II palace kiosk in Konya	179
Bekar Sultan tomb, Gülağaç (Aksaray)	182
Eğri minaret, Aksaray	184
Melik Gazi tomb, Pinarbaşı (Kayseri)	187
Brick muqarnas: conclusion	192
Sectional baked earth hydraulic pipes	193
GLAZE	196
<i>Minâ'î</i> , Kâshân and the Konya kiosk	198
Tile production and importation	206
MORTAR	208
Introduction	208
Brick mortar analysis	209
Smooth surface use of plaster	213
Moulded internal use of plaster	218
Mortar incisions at Kemah	221
İldegüzid origins	229
Mortar: conclusion	231
TIMBER	232
Structural and decorative uses of timber	231
Internal structural use	233
Exposed structural use	239
Decorative use of wood	242
Timber and microarchitecture	244
Scaffolding and form work	248
Timber conclusion	248

IRON	250
Structural uses of iron	250
Decorative uses of iron	251
Iron tools	254
Architectural uses of brass and bronze	255
CRAFTSMEN	259
Introduction	259
Muslim craftsmen	259
Christian craftsmen	259
Processes and role division in the construction trade in medieval Anatolia	262
Role division hypotheses	263
Staff and role division in early 7 th /13 th -century Sivas	267
Craftsmen: conclusion	270
CONCLUSION	272
 CHAPTER IV – THE ‘IZZ AL-DĪN KAY KĀWŪS I HOSPITAL, SIVAS: A CASE STUDY	
CONTENTS	274
INTRODUCTION	275
Urban context of the hospital complex	278
Publication of the building	279
Axial focus of the complex	282
Functionality of the complex	287
PORTAL	288
Epigraphy	291
Niches	293
Geometric frames	296
Muqarnas hood	297
Zoomorphic sculpture	299
Façade muqarnas brackets	304
Entrance iwan	306
NORTH IWAN	308
Muqarnas niche	312
Mortar incisions	317
Techniques	326
Glazed tile lozenge patterns	328
COURTYARD	332
<i>Riwāqs</i>	333
Star vaults	335
Epigraphy	337
East iwan framing patterns	341
Courtyard muqarnas niches in stone	343
Timber	346
TOMB	347
Formal sources	350
Façade	354
Epigraphy	356
Tympanum	363
<i>Mihrāb</i>	365
Drum	369
Crypt	372

Formal relationship to hospital.....	375
Subsequent related structures.....	376
CONCLUSION.....	379

CHAPTER V – CONCLUSION: PATRONAGE AND MEANING

INTRODUCTION.....	382
Architectural patronage from Kılıç Arslān II to Rukn al-Dīn.....	383
Architectural patronage under ‘Izz al-Dīn.....	383
Female patronage in Anatolia.....	386
The iconography of power.....	388
CONCLUSION.....	389
Further research and development.....	395

APPENDICES

Appendix 1.1 – Anatolian Great Mosques to c.617/1220.....	398
Appendix 1.2 – Regional dynastic rulers to c.617/1220.....	399
Appendix 2.1: Melik Gazi tomb, Pinarbaşı.....	400
Appendix 2.2: Bekar Sultan tomb, Gülağaç, nr. Aksaray.....	405
Appendix 2.3: Selime Sultan tomb, Selime, nr. Aksaray.....	411
Appendix 2.4: Tepsi minaret, Erzurum.....	417
Appendix 2.5: Great Mosque minaret, Harput.....	423
Appendix 2.6: Great Mosque minaret, Akşehir.....	427
Appendix 2.7: Hötüm Dede minaret, Malatya.....	431
Appendix 2.8: Melik Sunullah mosque minaret, Malatya.....	434
Appendix 2.9: Eğri minaret, Aksaray.....	437
Appendix 2.10: Kesik Minare mosque minaret, Aksaray.....	442
Appendix 2.11: Marble portal epigraphy, Konya.....	446
Appendix 3.1: A unique series of incisions near Afyon.....	448
Appendix 3.2: Craftsmen named in epigraphy to 617/1220.....	451
Appendix 4.1: A marble unicum in Konya.....	452
Appendix 4.2: Geometric pattern design process.....	456
Appendix 4.3: Analysis of the ‘Izz al-Dīn tomb façade panels.....	457
Appendix 4.4: Sectional drawing of the ‘Izz al-Dīn hospital south <i>riwāq</i> star vault.....	461
BIBLIOGRAPHY.....	462
INDEX.....	485

LIST OF FIGURES

CHAPTER I - INTRODUCTION: CONTEXT, SCOPE AND METHODOLOGY

Fig. 1.1 – Map of Anatolia in 617/1220.....	8
---	---

CHAPTER II - TOWARDS A NEW AESTHETIC: PORTALS, TOMBS AND MINARETS

Fig. 2.1 – Citadel mosque, Divriği; portal.....	41
Fig. 2.2 – Citadel mosque, Divriği; portal cross-section @ 130cm above top step.....	41
Fig. 2.3 – Sitte Melik tomb, Divriği.....	43
Fig. 2.4 – Sitte Melik tomb, Divriği; portal cross-section @ 180cm above grade.....	44
Fig. 2.5 – Mama Khātūn tomb enclosure portal, Tercan.....	45
Fig. 2.6 – Mama Khātūn tomb enclosure portal, Tercan; cross-section @ 160cm.....	45
Fig. 2.7 – Çifte madrasa, Kayseri; west portal.....	47
Fig. 2.8 – Çifte madrasa, Kayseri; west portal cross-section @ 60cm above base.....	47
Fig. 2.9 – Külük mosque, Kayseri; portal.....	48
Fig. 2.10 – Külük mosque, Kayseri; portal ground plan.....	48
Fig. 2.11 – Külük mosque, Kayseri; portal cross-section.....	49
Fig. 2.12 – Halifet Gazi tomb, Amasya; portal.....	49
Fig. 2.13 – Taş mosque, Konya.....	50
Fig. 2.14 – Taş mosque, Konya; façade cross-section @ 125cm above grade.....	50
Fig. 2.15 – Eshab-i Khaf <i>ribāt</i> , Afşin; portal.....	52
Fig. 2.16 – Eshab-i Khaf <i>ribāt</i> , Afşin; portal cross-section @ 136cm above grade.....	52
Fig. 2.17 – Evdir han, Yeşilbayır; portal.....	54
Fig. 2.18 – Evdir han, Yeşilbayır; portal cross-section @ 126cm above current grade.....	54
Fig. 2.19 – Stone muqarnas in Cairo and Aleppo.....	57
Fig. 2.20 – Evdir han, Yeşilbayır; portal muqarnas hood.....	59
Fig. 2.21 – Evdir han, Yeşilbayır; portal muqarnas hood underlying grid.....	59
Fig. 2.22 – Comparison of muqarnas hoods.....	60
Fig. 2.23 – Mama Khātūn tomb enclosure, Tercan; portal epigraphic roundels.....	64
Fig. 2.24 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; portal spandrel roundels.....	65
Fig. 2.25 – Çifte Madrasa, Kayseri; portal roundels.....	65
Fig. 2.26 – Halifet Gazi tomb, Amasya; portal roundels.....	66
Fig. 2.27 – Eshab-i Khaf <i>ribāt</i> , Afşin; right-hand roundels.....	67
Fig. 2.28 – Anatolian <i>ajouré</i> stone spandrel bosses.....	67
Fig. 2.29 – Comparison of early 7 th /13 th century niches.....	70
Fig. 2.30 – Mama Khātūn tomb enclosure, Tercan; muqarnas cornice band over niche.....	72
Fig. 2.31 – Comparison of portal voussoirs and arch forms.....	74
Fig. 2.32 – Comparison of portal framing patterns.....	77
Fig. 2.33 – Citadel mosque, Konya; north portal.....	79
Fig. 2.34 – Büyük Karatay madrasa, Konya; portal.....	80
Fig. 2.35 – Citadel mosque, Konya; north portal cross-section.....	81
Fig. 2.36 – Büyük Karatay madrasa, Konya; portal cross-section @ 167cm.....	81
Fig. 2.37 – Madrasa al-Sultāniyya, Aleppo; <i>mihrāb</i>	82
Fig. 2.38 – Bāb al-Mawşil, al-‘Amadiyya, Iraq.....	84
Fig. 2.39 – Büyük Karatay portal, Konya; right-hand side detail.....	86
Fig. 2.40 – Büyük Karatay madrasa, Konya; lower portal inscription (R).....	87
Fig. 2.41 – Büyük Karatay madrasa, Konya; lower portal inscription (L).....	87
Fig. 2.42 – Elbow brackets.....	89
Fig. 2.43 – Portal cross-sections comparison to scale.....	95
Fig. 2.44 – Yūsuf ibn Kuthayyir tomb, Nakhchivān.....	98
Fig. 2.45 – Yūsuf ibn Kuthayyir tomb, Nakhchivān; ground plan.....	98

Fig. 2.46 – Gīlān tomb, Nakhchivān	100
Fig. 2.47 – Portal blind arch comparison between Nakhchivān (L) and Kemah (R)	101
Fig. 2.48 – Mengücek Gazi tomb, Kemah	102
Fig. 2.49 – Mengücek Gazi tomb, Kemah; portal arch detail	102
Fig. 2.50 – Mengücek Gazi tomb, Kemah; portal articulation detail	103
Fig. 2.51 – Mengücek Gazi tomb, Kemah; Kufic epigraphic panel on the lintel	104
Fig. 2.52 – Yūsuf ibn Kuthayyir tomb, Nakhchivān; inscription over the doorway	104
Fig. 2.53 – Mengücek Gazi tomb, Kemah; signature panel on the north-east facet	105
Fig. 2.54 – Mengücek Gazi tomb, Kemah; epigraphic panel on the north facet	106
Fig. 2.55 – Mengücek Gazi tomb, Kemah; stylised plaster eagle motif on portal	106
Fig. 2.56 – Mengücek Gazi tomb, Kemah; crypt	107
Fig. 2.57 – Mu'mina Khātūn tomb, Nakhchivān, crypt	107
Fig. 2.58 – Yūsuf ibn Kuthayyir tomb, Nakhchivān; elevation	108
Fig. 2.59 – Mengücek Gazi tomb, Kemah; cross-section @ 135cm above top step	109
Fig. 2.60 – Kırk Kızlar tomb, Niksar; epigraphy on the south-east facet	109
Fig. 2.61 – Kırk Kızlar tomb, Niksar; cross-section	111
Fig. 2.62 – Kırk Kızlar tomb, Niksar	111
Fig. 2.63 – Kırk Kızlar tomb, Niksar; blind arch decoration	112
Fig. 2.64 – Kırk Kızlar tomb, Niksar; salt efflorescence damage on the exterior	112
Fig. 2.65 – Melik Gazi tomb, Pinarbaşı	115
Fig. 2.66 – Melik Gazi tomb, Pinarbaşı; dome interior	115
Fig. 2.67 – Melik Gazi tomb, Pinarbaşı; cross-section @ 110cm above current grade	116
Fig. 2.68 – Selime Sultan tomb, Selime nr. Aksaray; crypt plan	116
Fig. 2.69 – Marble spolia use on tombs in Kayseri	118
Fig. 2.70 – A selection of the early stone tombs of Anatolia	121
Fig. 2.71 – Tepsi minaret, Erzurum and Great Mosque minaret, Harput	127
Fig. 2.72 – Great Mosque minaret, Sivas and Great Mosque minaret, Akşehir	129
Fig. 2.73 – Great Mosque minaret, Sivas; base cross-section	131
Fig. 2.74 – Great Mosque minaret, Sivas; base south-east facet cross-section	131
Fig. 2.75 – Great Mosque minaret, Sivas; base	132
Fig. 2.76 – Great Mosque minaret, Sivas; upper section of shaft	133
Fig. 2.77 – Great Mosque minaret, Sivas; base east facet epigraphy	134
Fig. 2.78 – Great Mosque minaret, Sivas; base south-east facet epigraphy	135
Fig. 2.79 – Great Mosque minaret, Sivas; base east facet	136
Fig. 2.80 – Great Mosque minaret, Sivas; base south-west facet spandrels	137
Fig. 2.81 – Great Mosque minaret, Sivas; border of base south facet epigraphic panel	137
Fig. 2.82 – Aspendos palace glazed tile, now in Antalya Museum	137
Fig. 2.83 – Great Mosque minaret, Sivas; shaft epigraphic band drawings	140
Fig. 2.84 – Great Mosque minaret, Sivas; shaft epigraphic band	140
Fig. 2.85 – Great Mosque minaret, Sivas; south face of epigraphic band	140
Fig. 2.86 – Knotted Kufic epigraphy in Delhi	141
Fig. 2.87 – Nakhchivān (L) and Sivas (R) muqarnas cell form and decoration	144
Fig. 2.88 – Great Mosque minaret, Sivas; muqarnas patterns	145
Fig. 2.89 – Great Mosque minaret, Sivas; muqarnas band	145
Fig. 2.90 – Great Mosque minaret, Sivas; muqarnas plan	146
Fig. 2.91 – Kot minaret, Silvan	150

CHAPTER III – MATERIALS AND METHODS: THE CONSTRUCTION PROCESS IN MEDIEVAL ANATOLIA

Fig. 3.1 – Ferruh Shah mosque, Akşehir	157
Fig. 3.2 – Kılıç Arslān II kiosk, Konya; stone lion set in to the north façade	160
Fig. 3.3 – Stone lion from the Kılıç Arslān II kiosk, Konya	161
Fig. 3.4 – Citadel mosque, Divriği; portal door jamb detail	162
Fig. 3.5 – Citadel mosque, Divriği; portal lintel and tympanum detail	163
Fig. 3.6 – Sitte Melik tomb, Divriği; portal door jamb detail	164
Fig. 3.7 – Upper band of muqarnas above left niche, Mama Khātūn tomb, Tercan	164

Fig. 3.8 – Mama Khātūn tomb, Tercan; lower band of muqarnas above left niche	165
Fig. 3.9 – Upper muqarnas band of gravestone, SW corner of Ahlat cemetery	165
Fig. 3.10 – Kuyulu Hoca Paşa mosque; door detail	167
Fig. 3.11 – Byzantine bricks in Nicaea city wall	171
Fig. 3.12 – Medieval brickmaking image from the 'Nederlandische Bijbel', (c.1425 CE)	173
Fig. 3.13 – Tepsi minaret, Erzurum; interior shaft bricks	173
Fig. 3.14 – Hötüm Dede minaret, Eski Malatya; external base bricks	173
Fig. 3.15 – External base bricks of Great Mosque minaret, Sivas	174
Fig. 3.16 – Tepsi minaret, Erzurum; damaged area on upper shaft	175
Fig. 3.17 – Tepsi minaret, Erzurum; north-west section of the epigraphic band	175
Fig. 3.18 – Basic brick muqarnas cell forms and plans	177
Fig. 3.19 – Kılıç Arslān II kiosk, Konya; photographed in 1905 by Gertrude Bell	181
Fig. 3.20 – Kılıç Arslān II kiosk, Konya	182
Fig. 3.21 – Bekar Sultan tomb, Gülağaç; muqarnas band and plan	183
Fig. 3.22 – Eğri minaret, Aksaray	185
Fig. 3.23 – Eğri minaret, Aksaray; muqarnas plan	186
Fig. 3.24 – Çifte Minareli madrasa, Erzurum; minaret balcony muqarnas	187
Fig. 3.25 – Melik Gazi tomb, Pınarbaşı; muqarnas niche	189
Fig. 3.26 – Great Mosque, Akşehir; <i>mihrāb</i>	190
Fig. 3.27 – Great Mosque, Malatya; large muqarnas cells in <i>maqşūra</i> dome squinches	191
Fig. 3.28 – Great Mosque, Malatya; muqarnas at the springing of the main iwan arch	191
Fig. 3.29 – Water pipe sections in Konya Museum (L) and Külük hamam, Kayseri (R)	195
Fig. 3.30 – Frit body and copper oxide glaze detail of tile fragment	198
Fig. 3.31 – Kılıç Arslān II kiosk, Konya, <i>mināʾī</i> tiles (Karatay Museum, Konya)	201
Fig. 3.32 – Kılıç Arslān II kiosk, Konya; <i>mināʾī</i> tiles (Tiled Pavilion Museum, İstanbul)	201
Fig. 3.33 – Kılıç Arslān II kiosk, Konya; <i>mināʾī</i> tiles with figure playing the lute	202
Fig. 3.34 – Kılıç Arslān II kiosk, Konya; <i>mināʾī</i> tiles	202
Fig. 3.35 – Kılıç Arslān II kiosk, Konya; <i>mināʾī</i> and monochrome tiles	203
Fig. 3.36 – Kılıç Arslān II kiosk, Konya; monochrome tiles	203
Fig. 3.37 – Kılıç Arslān II kiosk, Konya; upper north wall	205
Fig. 3.38 – Kılıç Arslān II kiosk, Konya; fragments of square <i>mināʾī</i> tiles	206
Fig. 3.39 – Kılıç Arslān II kiosk, Konya; broader geometric composition of square tiles	206
Fig. 3.40 – Anatolian brick-built minaret mortar samples	212
Fig. 3.41 – Yūsuf ibn Kuthayyir tomb, Nakhchivān (A) and Kırk Kızlar tomb (B and C)	214
Fig. 3.42 – Kırk Kızlar tomb, Niksar; mortar detail of external facet	214
Fig. 3.43 – Kılıç Arslān II kiosk, Konya; painted plaster of the east wall	215
Fig. 3.44 – Kılıç Arslān II hamam, Aksaray; dome interior	216
Fig. 3.45 – Glazed terracotta plastering trowel (side view)	217
Fig. 3.46 – Glazed terracotta plastering trowel (bottom view)	217
Fig. 3.47 – Kılıç Arslān II kiosk, Konya; moulded internal plaster decoration	218
Fig. 3.48 – Kılıç Arslān II kiosk, Konya; stucco ceiling muqarnas cornice	220
Fig. 3.49 – Kılıç Arslān II kiosk, Konya; plaster ceiling	221
Fig. 3.50 – Mengücek Gazi tomb, Kemah; portal mortar patterns	222
Fig. 3.51 – Mengücek Gazi tomb, Kemah; mortar incision line drawings	223
Fig. 3.52 – Mengücek Gazi tomb, Kemah; geometric mortar incisions on portal	224
Fig. 3.53 – Mengücek Gazi tomb, Kemah; geometric mortar incisions on facet bevel	224
Fig. 3.54 – Mengücek Gazi tomb, Kemah; epigraphic mortar incisions flanking portal	225
Fig. 3.55 – Mengücek Gazi tomb, Kemah; stylised eagle on portal engaged column	226
Fig. 3.56 – Mengücek Gazi tomb, Kemah; single geometric mortar pattern on portal	227
Fig. 3.57 – Mengücek Gazi tomb, Kemah; narrow mortar incision on the exterior	228

Fig. 3.58 – Mengücek Gazi tomb, Kemah; narrow mortar incisions on crypt column	228
Fig. 3.59 – Mengücek Gazi tomb, Kemah, mortar patterns in the spandrel	229
Fig. 3.60 – Yūsuf ibn Kuthayyir tomb; patterns similar to ones at Kemah	229
Fig. 3.61 – Yūsuf ibn Kuthayyir tomb; X-and-circle mortar incisions around portal	220
Fig. 3.62 – Monreale cathedral, Sicily; woodworking mosaic	233
Fig. 3.63 – Kılıç Arslān II kiosk, Konya; internal detail	234
Fig. 3.64 – Büyük Karatay madrasa portal, Konya; side view	236
Fig. 3.65 – Melik Sunullah mosque minaret, Eski Malatya; upper section	237
Fig. 3.66 – Melik Sunullah mosque minaret, Eski Malatya; zone of transition	238
Fig. 3.67 – Eğri minaret, Aksaray; lintel in shaft above the door	238
Fig. 3.68 – Great Mosque, Akşehir; interior	240
Fig. 3.69 – Great Mosque, Akşehir; dome zone of transition	241
Fig. 3.70 – Great Mosque door, Kayseri	243
Fig. 3.71 – Taşhun Paşa mosque wooden <i>mihrāb</i>	244
Fig. 3.72 – Kılıç Arslān II <i>minbar</i> , Konya	246
Fig. 3.73 – Great Mosque <i>minbar</i> , Aksaray	247
Fig. 3.74 – Iron nails, excavated under west iwan of Büyük Karatay madrasa, Konya	250
Fig. 3.75 – Gök madrasa, Sivas; iron cramp	251
Fig. 3.76 – Iron stud in wooden window shutter, now in Konya Stone Museum	252
Fig. 3.77 – ‘Alā’ al-Dīn mosque, Ankara; door panel iron fittings detail	253
Fig. 3.78 – Stone masons tools, Antalya Museum	255
Fig. 3.79 – Great Mosque, Cizre; door knockers	257
Fig. 3.80 – Artuqid coin featuring double dragon motif	258
Fig. 3.81 – St. Hovhannes Mkrtitch church, Gandzasar, Armenia	261
Fig. 3.82 – St. Hovhannes Mkrtitch church, Gandzasar, Armenia; muqarnas skylight	261

CHAPTER IV - THE ‘IZZ AL-DĪN KAY KĀWŪS I HOSPITAL, SIVAS: A CASE STUDY

Fig. 4.1 – ‘Izz al-Dīn hospital, Sivas; the 7 th /13 th century urban context	281
Fig. 4.2 – ‘Izz al-Dīn Hospital, Sivas; ground plan	282
Fig. 4.3 – Çifte madrasa, Kayseri; ground plan	283
Fig. 4.4 – Orientation and relative position of 6 th /12 th -7 th /13 th c. Sivas structures	285
Fig. 4.5 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; errors and variation in the plan	286
Fig. 4.6 – ‘Izz al-Dīn Kay Kāwūs I hospital; portal cross-section at c.190cm	289
Fig. 4.7 – Doorway right-hand spandrel geometric relief roundel	290
Fig. 4.8 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; portal	290
Fig. 4.9 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; portal foundation epigraphy	291
Fig. 4.10 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; portal octagonal column capital	292
Fig. 4.11 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; portal right-hand niche	293
Fig. 4.12 – Carving comparison between Sivas and Georgia	295
Fig. 4.13 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; portal geometric frames	297
Fig. 4.14 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; portal muqarnas hood	298
Fig. 4.15 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; right-hand spandrel lion sculpture	300
Fig. 4.16 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas; left-hand spandrel lion sculpture	300
Fig. 4.17 – Silver <i>dirham</i> minted at Sivas in 640/1242-43	301
Fig. 4.18 – Projecting element on the upper left of the portal	302
Fig. 4.19 – East iwan north spandrel figural roundel representing the sun	303
Fig. 4.20 – East iwan south spandrel figural roundel representing the moon	303
Fig. 4.21 – West façade projecting muqarnas plinth	305
Fig. 4.22 – West façade muqarnas brackets	306
Fig. 4.23 – Entrance iwan looking east	307

Fig. 4.24 – North iwan	309
Fig. 4.25 – North iwan ground plan	310
Fig. 4.26 – North iwan and <i>riwāq</i>	311
Fig. 4.27 – East niche mortar decoration	313
Fig. 4.28 – East niche in north iwan	313
Fig. 4.29 – North iwan rectilinear rising joint incision patterns	318
Fig. 4.30 – North iwan epigraphic and curvilinear rising joint incision patterns	319
Fig. 4.31 – Mortar decoration east of tomb façade	320
Fig. 4.32 – Pattern 1; west side of north iwan vault	321
Fig. 4.33 – Pattern 1 inside Pattern 2; wall and vault on the west side of north iwan	322
Fig. 4.34 – Western arch of the eastern door in the north wall of north iwan	325
Fig. 4.35 – Gunbad-i Kabūd, Marāgha (593/1157); crypt interior mortar joint patterns	326
Fig. 4.36 – East pilaster and springing of east <i>riwāq</i> arch	327
Fig. 4.37 – Glazed tile lozenge patterns in the <i>riwāq</i> two bays west of north iwan	329
Fig. 4.38 – Glazed tile lozenge patterns in the <i>riwāq</i> one bay west of north iwan	329
Fig. 4.39 – East iwan niche geometric frame	330
Fig. 4.40 – Muqarnas niche in the centre of the east wall of the east iwan	330
Fig. 4.41 – East iwan before (L) and after (R) reconstruction	332
Fig. 4.42 – North façade of courtyard	332
Fig. 4.43 – Stone mason's mark located to the right of tomb entrance, south <i>riwāq</i> wall	334
Fig. 4.44 – South iwan and <i>riwāq</i>	334
Fig. 4.45 – South <i>riwāq</i> star vault (west)	336
Fig. 4.46 – South <i>riwāq</i> star vault (east)	337
Fig. 4.47 – Persian glazed epigraphic panel on north wall, one bay east of north iwan	338
Fig. 4.48 – Fragmentary epigraphic panel, one bay west of the north iwan	338
Fig. 4.49 – Epigraphic panel, one bay west of the north iwan	339
Fig. 4.50 – Ghūrid-style Kufic panel on south wall of bay to the east of tomb façade	340
Fig. 4.51 – Kufic panel below the west star vault	340
Fig. 4.52 – Persian epigraphy on north springing of east iwan arch	341
Fig. 4.53 – Fragmentary Persian epigraphy on south springing of east iwan arch	341
Fig. 4.54 – East iwan cross section (south side) @ 180cm above current grade	342
Fig. 4.55 – East iwan frame decoration (north side)	342
Fig. 4.56 – East iwan niche geometric frame	344
Fig. 4.57 – Muqarnas niche in the centre of the east wall of the east iwan	344
Fig. 4.58 – Window niche above west entrance to courtyard	345
Fig. 4.59 – South wall and tomb	348
Fig. 4.60 – 'Izz al-Dīn tomb; cross-section and crypt plan	348
Fig. 4.61 – 'Izz al-Dīn tomb; façade cross-section	348
Fig. 4.62 – 'Izz al-Dīn tomb; façade	349
Fig. 4.63 – Fakhr al-Dīn Rāzī mausoleum, Urgench	352
Fig. 4.64 – Mengücek Gazi tomb, Kemah; entrance	353
Fig. 4.65 – 'Izz al-Dīn tomb; blind panel above door	355
Fig. 4.66 – 'Izz al-Dīn tomb; panels above east (l) and west (r) window	355
Fig. 4.67 – 'Izz al-Dīn tomb; craftsman's signature cartouches above west window	356
Fig. 4.68 – 'Izz al-Dīn tomb; epigraphic panel above doorway	358
Fig. 4.69 – 'Izz al-Dīn tomb; Persian verses over door	359
Fig. 4.70 – 'Izz al-Dīn tomb; epigraphic panel above the west window blind arch	360
Fig. 4.71 – 'Izz al-Dīn tomb; epigraphic panel above central blind arch	361
Fig. 4.72 – 'Izz al-Dīn tomb; epigraphic panel above the east window blind arch	361
Fig. 4.73 – Mu'mina Khātūn tomb, Nakhchiavān; corner epigraphy detail	361

Fig. 4.74 – Great Mosque minaret, Sivas; epigraphic band (west face).....	362
Fig. 4.75 – ‘Izz al-Dīn tomb; funerary and date inscription below tympanum.....	363
Fig. 4.76 – ‘Izz al-Dīn tomb; tympanum glazed ‘Muḥammad’ epigraphy.....	364
Fig. 4.77 – Kesik Minare mosque minaret, Aksaray.....	365
Fig. 4.78 – Çifte Minareli madrasa, Sivas; minaret.....	365
Fig. 4.79 – ‘Izz al-Dīn tomb <i>miḥrāb</i> epigraphy (<i>sūra</i> 9, <i>āyā</i> 18).....	366
Fig. 4.80 – ‘Izz al-Dīn tomb <i>miḥrāb</i> cross-section.....	367
Fig. 4.81 – ‘Izz al-Dīn tomb <i>miḥrāb</i>	367
Fig. 4.82 – ‘Izz al-Dīn tomb; upper right scallop niche window in the south wall.....	368
Fig. 4.83 – ‘Izz al-Dīn tomb; south-west quadrant of drum.....	370
Fig. 4.84 – ‘Izz al-Dīn tomb; south-east quadrant of drum.....	370
Fig. 4.85 – ‘Izz al-Dīn tomb; dome and drum transition.....	371
Fig. 4.86 – ‘Izz al-Dīn tomb; façade interior and drum transition.....	371
Fig. 4.87 – ‘Izz al-Dīn tomb; glazed square tile on the sarcophagus of ‘Izz al-Dīn.....	373
Fig. 4.88 – ‘Izz al-Dīn tomb; crypt access.....	373
Fig. 4.89 – ‘Izz al-Dīn tomb; crypt (looking west).....	374
Fig. 4.90 – ‘Izz al-Dīn Kay Kāwūs I hospital; interior of room east of north iwan.....	375
Fig. 4.91 – Ertokuş tomb, Isparta; entrance.....	377
Fig. 4.92 – Ertokuş tomb, Isparta; ground plan.....	378

LIST OF TABLES

CHAPTER II - TOWARDS A NEW AESTHETIC: PORTALS, TOMBS AND MINARETS

Table 2.1 – Muqarnas hood portal corpus and properties	58
Table 2.2 – Portal pattern characteristics	75
Table 2.3 – Portal corpus and locations	93
Table 2.4 – Tomb corpus and locations	124
Table 2.5 – Minaret corpus and locations	151

CHAPTER III – MATERIALS AND METHODS: THE CONSTRUCTION PROCESS IN MEDIEVAL ANATOLIA

Table 3.1 – Brick corpus and sizes	172
Table 3.2 – Kılıç Arslân II kiosk, Konya (c.569/1174); muqarnas cell forms	182
Table 3.3 – Analysis of mortar from brick minarets	213
Table 3.4 – Processes involved in the production and use of bricks	264
Table 3.5 – Processes involved in the production and installation of glazed elements	265
Table 3.6 – Processes involved in stone construction	265
Table 3.7 – Processes involved in the production and installation of mortars	266
Table 3.8 – Processes involved in the preparation and use of timber	266
Table 3.9 – Processes involved in the production of iron objects	267
Table 3.10 – Miscellaneous site roles	267

CHAPTER IV - THE ‘IZZ AL-DĪN KAY KĀWŪS I HOSPITAL, SIVAS: A CASE STUDY

Table 4.1 – Sivas hospital; portal muqarnas hood composition	298
Table 4.2 – Distribution and types of rectilinear geometric patterns	345

NOTES ON TRANSLITERATION

Because of the the wide range of languages and sources used in a work of this nature, and the changes in the region over time, a wholly consistent system of transliteration is virtually impossible. Modern Turkish has been used for the name of buildings in Turkey, with the exception of Khātūn for Hatun, as the name is used for related structures outwith Turkey. English is used for building types, so mosque rather than *cami* or *jāmi*'. The modern Turkish spelling of cities in Turkey is used throughout (with the earlier Greek name given when relevant). Common English spelling of countries is used.

For Arabic and Persian terms and titles, the style of transliteration used in the *International Journal of Middle Eastern Studies* is applied. Where a Turkish name is found in an Arabic inscription, the modern Turkish spelling of the name is employed. For cities in Iran, strict transliteration is also applied throughout, so 'Iṣfahān' not 'Isfahan'. Standard English names are used for cities in Syria and Iraq, such as Aleppo and Baghdad.

Regarding inscriptions, the exact Arabic or Persian text is given where possible, including any errors, while the transliteration attempts to correct the more obvious mistakes. Where a reading is not certain, the word or phrase is followed by (?), while sections that are not at all readable are indicated by three full stops. On occasion, a necessary but absent word is inserted within square brackets. Primacy is given to the original inscription, with earlier published versions cited in the footnotes, but corrected in the text when required.

With the exception of proper names, foreign words are given in italics, unless they are in common usage in English.

CHAPTER I

Introduction:

Scope, Context and Methodology

INTRODUCTION

Scope, aims and structure

The first mosques in Anatolia were not built until the mid-6th/12th century¹ and they were generally fairly austere unornamented stone structures.² It was not until the last quarter of the 6th/12th century, when the Rūm Saljūq sultan Kılıç Arslān II (d.588/1192)³ had consolidated control over most of Anatolia, that a significant programme of construction got underway. That is the point at which the chronological scope of this study begins, and it ends with the death of his grandson, sultan ‘Izz al-Dīn Kay Kāwūs I (d.616/1219-20). It was not just the Rūm Saljūq dynasty that was engaged in the construction of monumental structures, as will be shown in this study, but it was increasingly dominant in terms of both political power and architectural patronage. Over the course of less than fifty years, a corpus of buildings was constructed which blended forms and decoration developed in the Islamic architecture of Iran and Central Asia with the indigenous lithic medium of Anatolia. In the course of this process of synthesis, adoption and absorption, a number of unique structures were built and a definable aesthetic emerged across the region. Some of the newly introduced methods and motifs were absorbed into the architectural canon, whilst others withered and died. The hospital that ‘Izz al-Dīn founded in Sivas in 614/1217-18 is the last structure covered in this study. It may be viewed as the building which marks the end of the beginning, in regard to the development of an identifiably Rūm Saljūq architectural aesthetic in Anatolia. In the following decades building work continued unabated; indeed it effloresced in the second half of the 7th/13th century, following the Mongol victory at Köse Dağ in

¹ Peacock (2013), p.78. Pickett (1997), p.24 dates the heavily restored free-standing minaret to the north-east of the Great Mosque of Siirt in south-east Anatolia to 523/1128, however the style of the glazed decoration suggests a date nearer the end of the 6th/12th century. Bloom (2013), p.259 notes that the minaret has an inscription stating that it was restored in 1129 CE.

² See appendix 1.1 for the corpus of surviving great mosques built in the 6th/12th century.

³ Bosworth (1996), p.213. Where possible, *hijra* dates followed by Common Era dates are given throughout. When quoting sources that are not specific enough to also give the *hijra* year are omitted. See appendix 1.2 for the dates of the rulers of the various dynasties in the region during the period of study.

641/1243.⁴ In the latter phase the process of development became a matter of incremental refinement within an established framework, rather than the synthesis of a new style forged in a crucible of cultural interaction and architectural innovation.⁵

The broad aim of this thesis is to discern the patterns of architectural development that emerged in Anatolia from the late 6th/12th century onwards. This involves a detailed examination of the disparate styles, sources and survivals from the early period of buildings constructed under the patronage of the primarily Turkic Muslim elites. From this study two separate, but ultimately intertwined, themes emerge. One is to determine the role that architecture played in the establishment of a unique Rūm Saljūq imperial aesthetic and its role in Islamisation, dynastic identity and legitimisation. The other is to demonstrate the diversity of sources, in terms of both craftsmen and materials, and how that affected the resultant architectural aesthetic. In addition, this study includes the close analyses of a number of decorative details of several structures which have not received the attention of other scholars.

It has been said that a second Iran was created in Anatolia,⁶ and the general impact of Iranian style on the architecture of Anatolia has been addressed by Crane.⁷ This thesis includes a close examination of the specific details of the connections between Iran and Anatolia. There is particular focus on the use of brick and the development of glazed tile decoration, which has not previously been sufficiently addressed in the literature, and is a topic which runs through this thesis. The architecture of the Rūm Saljūqs has also been argued to have been profoundly influenced by the architecture of the Byzantines⁸ and the Armenians.⁹ The extent of any such connections are

⁴ As the patronage changed with the removal of any real sultan authority, so did the types of buildings constructed. There was an increase in the number of buildings erected, but a reduction in the scale of most of the structures.

⁵ For a study of the period immediately after the scope of this thesis see Yalman (2011).

⁶ Hillenbrand (2005), p.168. She adds that it was the Turks that conquered, but the Persians that brought Islamic religious and secular culture to Anatolia.

⁷ See Crane (1994), pp.263-268. The article discusses the powerful impact of Iran on the typology and planning of buildings and suggests that the reason was, in part, an attempt by the patrons in Anatolia to legitimise themselves through a connection with the Iranian past. The main problem with this hypothesis is how the local population would understand the Iranian aspect, being largely indigenous to Anatolia.

⁸ Dunn (1989), p.144 suggests that extant Byzantine architecture and the remaining Byzantine craftsmen affected the Rūm Saljūq aesthetic. Such a view is tenable in the border region, especially in Akşehir, but is less sustainable further to the east.

addressed throughout this study. An attempt to understand the numerous sources which led to the unique architectural synthesis in the region, in addition to the means and methods of production, are the threads that tie this thesis together.

Owing to the relatively limited attention given to brick structures of the early period in previous studies, these are addressed in somewhat greater detail than the more prevalent stone structures. In order to cover the whole period, as well as the major structural typologies, there is particular focus on the Mengücek Gazi tomb in Kemah, the minaret of the Great Mosque of Sivas and the aforementioned hybrid brick and stone-built hospital and tomb of 'Izz al-Dīn Kay Kāwūs I. It was the brick structures which acted as the vanguard for the introduction of Persianate forms that were subsequently executed in stone across Anatolia.

Rogers' unpublished D.Phil. thesis deals extensively with the epigraphic evidence in relation to the working practices and division of labour in the Anatolian building trade of the 7th/13th century.¹⁰ The main focus of his section on craftsmen concerns the members of the upper echelons of the construction business, the men who were mentioned in inscriptions. In contrast, the main focus of the present study regarding human agency is on the working practices of the undocumented craftsmen and labourers, through the analysis of architectural remains. There is a paucity of medieval texts, particularly concerning structures.¹¹ As a result, the buildings are the most tangible physical record of a wide cross-section of the population living under Muslim rule in Anatolia and must speak for themselves. The structural remains act as a silent record of the methods employed by the craftsmen who built them. Consequently, they are the primary sources employed in the following chapters and are the foundation of this entire study. They have been analysed in order to reveal information about the elites which founded, and in many cases used, the buildings, as well as the craftsmen and labourers involved in the construction process. The buildings are unbiased witnesses to the past, while the epigraphy is an accurate

⁹ Dadoyan (2013), p.148 argues that in a similar manner to the effect Armenians had on Fāṭimid architecture following the rise to power of Badr al-Jamālī in Syria and Egypt, Saljūq architecture was Armenianised by Armenian builders.

¹⁰ Rogers (1972), pp.89-103. Related topics regarding the management of projects between the patron and craftsmen are also discussed in Rogers (1976), pp.69-103.

¹¹ Rogers (1972), p.9 describes the historical sources as virtually useless as far as architecture is concerned.

record of how the patrons wished to be perceived, so any bias is at least clearly displayed.¹² This relative clarity regarding the buildings and their epigraphy stands in contrast to many of the contemporary or *post facto* written accounts, which may be hagiographic or condemnatory depending upon the authors and their political allegiances.

The analysis of the buildings in the corpus begins in chapter two with an examination of the surviving portals, tombs and minarets, as these represent the most decorative and identifiably Muslim architectural elements.¹³ This approach employs some aspects of the formalist methodology established by Strzygowski,¹⁴ but with the important addition of historical background to place them in context of the society from which they emerged. The overview of the decorative and formal elements of the corpus is followed in chapter three by an examination of the various raw materials, and the processes required to manipulate them into finished structures. A wide range of structures and their constituent elements are examined, but the palace kiosk of sultan Kılıç Arslān II in Konya receives particular attention. This is in order to provide a better understanding of the building, and to demonstrate how the various materials were combined in a single structure. Having examined the key decorative and formal elements of the canon, and investigated the materials needed and methods involved in the creation of the buildings of the corpus, an in-depth case study of a structure which represents the culmination of the formative process follows in chapter four. Its subject, the hospital and tomb founded in Sivas by sultan ‘Izz al-Dīn Kay Kāwūs I in 614/1217-18, includes all the major materials and processes discussed in chapter three, and marks the point at which a definably Rūm Saljūq aesthetic can be said to have emerged. The examination of the building and its decoration comprises the entirety of chapter four and offers a reappraisal of the complex, and the wider significance of Sivas.

¹² Blair (1998), p.172 states that unlike so many other objects, the epigraphy on buildings generally has unimpeachable credentials.

¹³ The city walls and bridge structures tend to be built on the foundations, and often in the manner, of the earlier Byzantine and Roman structures and consequently they do not form part of this study. For an overview of the surviving bridges see Goodwin (1994), pp.269-277. For details of the city walls of Sinop see Redford (2010), pp.125-149 and for the walls of Antalya see Redford and Leiser (2008).

¹⁴ See Strzygowski (1917). Pancaroğlu (2007), pp.67-78 includes a summary of his approach and clearly elucidates the effect of his work on the subsequent study of the early Muslim architecture in Turkey.

The study concludes in chapter five with an examination of the surviving architectural remains as expressions of power, through the prism of the established concepts of kingship, state formation and imperial identity. Although the entire corpus is encompassed, the main focus of this thesis is on the structures in the political capital at Konya, and in Sivas, which Rogers considered to be the commercial capital of the sultanate.¹⁵ The micro-analysis and historical contextualisation of the buildings and their constituent elements in the preceding chapters provides the basis for a macro-view of the corpus and its wider role in society. The overall aims and intentions of the Muslim elites of the late 6th/12th and early 7th/13th centuries are examined by investigating the patterns of royal, elite and female patronage of architecture across the region. The thesis concludes with a summary of the key findings of the entire study and some possible future avenues of inquiry.

Primary research resources

The photographs, plans and visual analysis by the author are the result of four research trips to Turkey carried out between 2010 and 2014.¹⁶ Structures in and around more than forty cities across Anatolia have been documented, analysed and, where necessary, measured. This has allowed for the preparation of cross-section, elevation and ground plans. During these trips a large number of objects from numerous national and provincial museums were also photographed and measured. The two surviving Ildegüzid structures in Nakhchivān, the Yūsuf ibn Kuthayyir tomb (557/1162-3) and Mu'mina Khātūn tomb (582/1186-7), were documented in 2014. Relevant Fāṭimid and Mamlūk structures in Cairo were analysed and photographed during two trips, in 2009 and 2012, while the images of the Zangid and Ayyūbid structures in Aleppo and Damascus date from a trip to Syria in 2007. The photographs of the early 7th/13th-century post-Ghūrid architecture of Delhi were taken during the course of a three month research trip to northern India in 2011. The discussion of the connections between the architecture of Anatolia and Qarakhānid Central Asia is based on data gathered in Kyrgyzstan in October 2014. Unless

¹⁵ Rogers (1976), p.85.

¹⁶ A few images of the citadel mosque in Divriği date from a trip in 2005, prior to the subsequent rebuilding of much of the structure.

otherwise stated, all the cited measurements and the line drawings in this thesis are the result of direct observation in the field. General ground plans for most of the subject structures have been published, with varying degrees of accuracy, at some point during the 20th century, and an attempt has been made to correct some of the more egregious errors where necessary. In contrast, there is a dearth of published cross-sectional drawings of many of the portals and other architectural details. As a result, a significant number have been prepared and are included in the following chapters in order to augment the photographs and aid in the understanding of the buildings.

Owing to the difficulty of acquiring a visa for Iran, several relevant structures in north-west Iran, especially the Gunbad-i Surkh (542/1147-8) and the Gunbad-i Kabūd (593/1196), both located in Marāgha, have received less attention than they would have, had direct observation been possible.¹⁷ In addition, the current security situation in Afghanistan has precluded the examination of a number of relevant buildings in the north-west of the country. These include what little remains of the Shāh-i Mashhad madrasa (561/1165-6) and the portal of the Friday mosque in Herāt (597/1201). Detailed visual analysis of these and other surviving structures is still required in order to better understand the relationship between the architecture of Khurāsān¹⁸ and that of central Anatolia in the late 6th/12th and early 7th/13th centuries.

Rationale for the selection of buildings

Aside from the well-known but poorly understood hospital in Sivas, built for ‘Izz al-Dīn in 614/1217-18, a number of other, lesser-known structures are examined in the following chapters. In order to fill the lacunae in the scholarly record, attention is focused on the elements of the corpus that are not so well studied. Almost all the surviving portals and their constituent elements are examined in detail, as are the

¹⁷ As a result of the somewhat grainy nature of a number of the published images, along with uncertainty regarding the scale and some of the specific details of construction, only cursory attention is given to structures that have not been analysed and measured by the author.

¹⁸ Hambly (2001), pp.214-5 states that medieval geographers referred to Khurāsān as the area north and east of the central Iranian desert region as far as the Oxus and upstream as far as the mountains of Badakhshān. It was divided into four quarters (*rub*) named after the four principal cities; Nishāpūr, Marv, Herāt and Balkh and thus included lands now in Iran, Afghanistan and Turkmenistan. The name is used throughout this work to indicate the larger area, rather than just the north-east *ustan* of modern Iran, with its capital at Mashhad.

surviving brick tombs, and between the main text and the appendices all the surviving brick minarets are addressed. As a result of the work of scholars such as Redford, Erdmann, Goodwin and Önköl, very little attention has had to be paid to mosques, city walls¹⁹, caravanserais,²⁰ bridges and many of the stone-built tombs. They have, for the most part, been studied in detail by other scholars and, furthermore, they do not tend to feature the level of decoration that is found on the structures which are addressed in the following chapters.



Fig. 1.1 – Map of Anatolia in c.617/1220²¹

¹⁹ In addition, many of the surviving city and citadel walls are somewhat palimpsestuous, incorporating earlier Byzantine and later Ottoman elements.

²⁰ An exception to this is the study of the Evdir han portal in chapter two.

²¹ The border shown is a general guide to the extent of the sultanate. In reality the borders were more zonal than lineal. In addition to the land under territorial control, the military and commercial sphere extended irregularly beyond the area indicated on the map, particularly regarding maritime trade.

Historical context

It has been argued by Peacock that Anatolia lacked the general accoutrements of Islamic civilization until about the end of the period of study (c.617/1220).²² As for why there was not a major programme of architectural development earlier in the 6th/12th century, lacunae from the archaeological record support the view that there was not the economic stability required for such a project. The earliest surviving *dīnār*, a higher value coin,²³ was not struck until 571/1175-6 in Konya, more than a century after they were being circulated by the Great Saljūq rulers in Iran. The introduction of *dīnārs* corresponds closely with the beginning of the urban redevelopment of Anatolia and indicates the increasingly secure fiscal position of the sultanate.²⁴

The origins of the Saljūqs and their arrival in Anatolia

Very little is known about the identity of the Türkmen or Oghuz tribes that are said to have propelled the Saljūq conquests in Central Asia and the Middle East in the 5th/11th century.²⁵ The *al-Kāmil fī l-taʾrīkh* by Ibn al-Athīr (b.555/1160) is the key Arabic chronicle for the history of the Saljūqs²⁶ and it, along with the chronicle of the Byzantine Niketas Choniātēs (1156-1217 CE),²⁷ is the main primary source used to augment the synthesis of secondary sources.

It is thought that the first Turkish raids into Anatolia were led by Chagri, the brother of ʿToghriḡ and father of Alp Arslān,²⁸ and the sacerdotal chronicler Michael the

²² Peacock (2013), p.76. These accoutrements include such institutions as madrasas, sophisticated bureaucracy and a literary tradition.

²³ Cahen (1960), p.798 states that a *dīnār* was worth forty times more than a *dirham* during the period of study.

²⁴ *Ibid.*, p.76. The earliest securely dated Rūm Saljūq coin is a low value *fiḡs*, dating from the reign of Masʿūd (510/1116 – 551/1156). Although the absence of evidence is not the evidence of absence, it is noteworthy that there is a lack of higher value Rūm Saljūq coins from the first three quarters of the 6th/12th century.

²⁵ Peacock (2013), p.55.

²⁶ Hillenbrand (2007), p.64. Richards (2007) and Richards (2008) are the translations cited throughout.

²⁷ Treadgold (2013), p.446 states that the chronicle of Choniātēs is a carefully and judiciously composed work. It is the only detailed Byzantine history for the period 1176-1204 CE and he suggests that it can be assumed that the facts within are right. Such a view may be over-generous but the chronicle tends to correspond with other sources, such as Ibn al-Athīr, for the most part. The Magiulias (1984) translation is the version cited throughout.

²⁸ Ertug (1991), p.15.

Syrian (1166-99 CE) gives the year 1030 CE as the beginning of Saljūq penetration into Anatolia.²⁹ The combination of elite Saljūqs and Türkmen or Oghuz tribesmen gave the conquest of Anatolia a dual nature, as it was both nomadic and sultanic,³⁰ with both state-directed and haphazard tribal raiding elements. Anatolia is often represented as a distant periphery, irrelevant to the interests of the Great Saljūq sultans, but Peacock argues that such a view does not do justice to the situation, as both Alp Arslān and Malikshāh took an intense interest in Anatolia.³¹ It was the policy of the first three Great Saljūq rulers to direct Türkmen to the empire's frontiers, in order to harass their enemies and avoid the problem of controlling these rather undisciplined forces. Although the Great Saljūq borderlands approached those of the Christian Byzantines, and there were numerous nomadic incursions into their territory, it seems that Alp Arslān's prime target was the Shī'ī Fāṭimids whose capital was Cairo.³²

The Saljūq victory over the Byzantines at Manzikert in 463/1071 opened up Anatolia to Muslim rule. The Battle of Manzikert occurred primarily because the Byzantine emperor Romanus IV Diogenes (r.1068-71 CE) wanted to recapture the Armenian fortress at Manzikert, located to the north of Ahlat in south-east Anatolia (fig. 1.1). Alp Arslān appears to have offered peace initiatives prior to the battle but these were rebuffed by Romanus as he was confident of victory. Following a period of confusion, when at one point the imperial standard was turned around and the rearguard troops under the direction of Ducas left the field, the battle was lost and Romanus was captured. Another cause for the defeat was the defection of Turkish mercenaries from the Byzantine to the Saljūq side, which compounded the loss of the rearguard. Given the comprehensive defeat of the Byzantines, it is surprising that neither Alp Arslān nor his son and heir Malikshāh made an attempt to follow up on

²⁹ Dadoyan (2013), p.22. This date corresponds with Ibn al-Athīr's mention of a raid by the 'Irāqīya against Armenia in 420/1029. See Peacock (2010), p.139 for analysis of the early incursions into Anatolia.

³⁰ Vryonis (1975), p.45.

³¹ Peacock (2013), p.68. See *ibid.*, pp. 68-75 for details of the relationship between the Byzantines, the Nāwakīya and sultans Alp Arslān and Malikshāh.

³² Hillenbrand (2007), pp.6-7.

the victory.³³ Although the battle was clearly a significant event, Peacock has suggested that the Byzantine failure to deal with Türkmen incursions over the previous forty years indicates that Manzikert was of symbolic importance, rather than having been a turning point in its own right.³⁴

The group which came to be known as the Rûm Saljûqs was an offshoot of the Great Saljûq family that had fallen out of favour following the rebellion of Kutalmış ibn Arslân Isrâ'îl ibn Saljûq (d.456/1063) against the sultan Alp Arslân.³⁵ The sons of Kutalmış, Sulaymân and Manşûr, fled Iran in 465/1073 and arrived in Anatolia as refugees who hired out their military services to Byzantine factions. In 473/1081 Sulaymân (d.478/1086) took possession of Nicaea and established the first, rather precarious, Rûm Saljûq principality there.³⁶ Under Kılıç Arslân I (r.485-500/1092-1107)³⁷ Nicaea was lost to the armies of the First Crusade in 1097 CE while he was laying siege to Malatya.³⁸ Following the death of Dānishmend in 497/1104 Kılıç Arslân I seized Malatya and, according to Aksarayî, he then took Ankara, prior to capturing Konya and making it the capital of the sultanate.³⁹ The process of Rûm Saljûq sultans marrying Christians appears to have begun during the rule of Kılıç Arslân I, who married Isabella, the sister of Raymond IV of St. Gilles, Count of Toulouse.⁴⁰

Muslim rule of Anatolia to 551/1156

Recently there has been an increase in the understanding of the complexity of the relationship between the ruling Rûm Saljûq elites and the three main groups of nomadic conglomerations. These were the Balkhân-Kūhīyān and the 'Irāqīya, which were closely related, and the Nāwakīya. All three groups are collectively referred to

³³ *Ibid.*, pp.8-15. For an overview of the lead up to as well as the conduct and consequences of the battle at Manzikert see *ibid.*, especially pp.1-20, and pp.229-236 for a Byzantine eyewitness account of the battle.

³⁴ Peacock (2010), p.5.

³⁵ Mecit (2014), pp.19-20. Kutalmış died in battle near Rayy and his sons were held captive until the death of Alp Arslân in 465/1073.

³⁶ *Ibid.*, pp.19-23.

³⁷ See Bosworth (1996), p.215 for a list of the Rûm Saljûq rulers and their accession and death dates.

³⁸ Mecit (2014), p.32.

³⁹ *Ibid.*, p.36.

⁴⁰ Köprülü (1993), p.xv. The translator, Gary Leiser, cites in his introduction the German Ottomanist Franz Babinger, who went on to rather boldly describe Isabella as the mother of the Rûm Saljûqs.

as Türkmen and it is thought that they were more political than tribal in nature.⁴¹ Owing in part to the nomadic lifestyle of these Türkmen warriors, there was a rather fluid character to the boundaries in the mountainous western frontier of the Rûm Saljûq sultanate during the mid-6th/12th century.⁴²

Prior to the expansion of the Rûm Saljûq lands under Kılıç Arslân II, the largest Muslim dynasty in central Anatolia was the Dānishmendids, with their main centres being Kayseri, Sivas and Niksar. Although Cahen insisted that they were ‘pure Turks’, such a view may now be dismissed, as Matthew of Edessa stated that Dānishmend (d.497/1104) was Armenian.⁴³ Such an understanding of the origins of a large Muslim dynasty, which had close relations to the Rûm Saljûqs, undermines much of the foundation of the Turkocentric approach to modern historiography of the Rûm Saljûq period. As a result it has been suggested by Dadoyan that the old paradigms offered by Cahen have lost relevance and applicability.⁴⁴

Another Muslim dynasty that controlled land in central and eastern Anatolia through the 6th/12th and 7th/13th centuries were the Mengüjekids. They were an obscure *ghāzī* dynasty, first recorded in 512/1118 when Ishāq ibn Mengücek threatened Malatya from his fortress in Kemah, near Erzincan (fig. 1.1). At his death the lands were divided between his sons in the traditional Turkic manner. Dāwūd I ibn Ishāq ruled Kemah and Erzincan until his death in 560/1165, followed by Bahrāmshāh ibn Dāwūd who ruled until 622/1225. It was during his rule that the court in Erzincan became a cultural centre⁴⁵ and the Mengücek Gazi tomb in Kemah, examined in detail in chapters two and three, was constructed. The other branch of the

⁴¹ Peacock (2013), p.56 and pp.75-76. The author goes on the state that all three groups appear to have been Türkmen who were not subject to the descendants of Mīkhā’il. Although the relations between the Saljûq sultan and the Türkmen were not uniformly smooth, including occasional rebellions, the sultans continued to affirm links to the nomads into the 7th/13th century and could generally rely on Türkmen support.

⁴² Vryonis (1975), p.45.

⁴³ Dadoyan (2013), pp.50-51 cites Doustorean, A. (tr.) *The Chronicle of Matthew of Edessa*, Lanham, MD (1993), pp.324-325. The Dānishmendid *amīrs* were said to descend from the Balwaši-Lipariteans, a prominent Armenian family from Georgia. Dadoyan (2013), p.259 argues that Cahen’s difficulty in accepting the Armenian origins of the Dānishmendids lay in the application of modern criteria of ethnicity and nationalism to a medieval situation.

⁴⁴ *Ibid.*, p.54. *Ibid.*, p.148 goes as far as to suggest that there was an Armenianising of the Saljûqs. Mecit (2014), p.181 follows the paradigm established by Cahen in describing the Dānishmendids as Turkish, but does state in *ibid.*, p.49 that their origin cannot be ascertained.

⁴⁵ Bosworth (1996), p.217.

Mengüjekid dynasty was ruled from Divriği, near Sivas, under Sayf al-Dīn Shāhanshāh (r.570/1175-c.593/1197).⁴⁶

Kılıç Arslān II: Rūm Saljūq hegemony and the division of the sultanate

At the division of the Rūm Saljūq sultanate by sultan Mas'ūd, Konya went to Kılıç Arslān II,⁴⁷ who became sultan in 551/1156. He has been described by Cahen as one of the most important Rūm Saljūq sultans, due primarily to the political unification of most of Anatolia during his rule.⁴⁸ It was under the rule of Kılıç Arslān II that the change from a principality to a state occurred.⁴⁹ The use of the term empire is problematic in regard to its definition in the context of the wider region at the time. A detailed discussion is beyond the scope of this study but, given the scale of the empires of the Khwārazm Shāh and the Mongols, it is difficult to suggest that the same terminology should be used to describe the lands under Rūm Saljūq control. However, the dynasty clearly had imperial ambitions, which can be seen in the surviving architecture, as well as in its political and military policy.

Although he was strongly biased in favour of the Byzantines, the chronicler Niketas Choniātēs (1156-1217 CE)⁵⁰ does provide a rare, if perhaps unduly scathing, physical description of Kılıç Arslān II, stating that he was maimed in several parts of his body, had dislocated wrists and a limp. He also described him as a cheat and incapable of speaking the truth.⁵¹ In contrast, the rather more hagiographic account by Ibn al-Athīr describes him as a man of excellent rule, great prestige and abundant justice.⁵² Two years after Kılıç Arslān II became sultan a peace treaty was signed with the Byzantine emperor Manuel (r.1143-80 CE), but the Byzantines still

⁴⁶ See Bosworth (1996), p.217 for a full list of the Mengüjekid rulers.

⁴⁷ Magoulias (1984), p.66. The rest of the sultanate was distributed between Mas'ūd's son-in-law Yağıbasan who got Amasya, Ankara and Cappadocia, and his other son-in-law Dhū'l-Nūn, was awarded Kayseri and Sivas. Mecit (2014), p.156 states that the division of the empire led to instability.

⁴⁸ Cahen (1986), p.104.

⁴⁹ Mecit (2014), p.56. The definition of the term state, along with empire, is problematic in the pre-modern context. As a result the term sultanate is used in this study to describe the lands under Rūm Saljūq control.

⁵⁰ Treadgold (2013), p.423 and p.435. He entered the court bureaucracy in 1180 CE. See *ibid.*, pp.423-456 for an overview of the life and works of Choniātēs.

⁵¹ Magoulias (1984), p.69.

⁵² Richards (2007), pp.403-404. Such differences and biases highlight the problems inherent in the few surviving contemporary sources.

campaigns against the Türkmen nomads that year.⁵³ Another peace treaty signed in 557/1162, following Kılıç Arslān II's visit to Constantinople, had no lasting effect as three years later there were extensive Turkish incursions into Byzantine territory.⁵⁴ He appears to have gone to the Byzantine capital because he faced an internal threat and, like his father, wanted the support of the emperor.⁵⁵ According to Bar Hebraeus (d. 685/1286), Kılıç Arslān II remained in Constantinople for eighty days in 557/1162.⁵⁶ During that time he was given the honorific title of spiritual son of the emperor Manuel and concluded a peace treaty.⁵⁷ Choniatēs states that Kılıç Arslān II promised to hand Sivas to the emperor after being presented with riches.⁵⁸ The reasons for the visit remain unclear. Mecit calls it a trip,⁵⁹ while in contrast Beihammer refers to it as a 'flight to Constantinople' and discusses it in the context of a paper on defection.⁶⁰ Following a defeat at the hands of Yaghī Arslān ibn Dānīshmand, the Dānīshmendid ruler of Malatya in 560/1164-5, Ibn al-Athīr describes Kılıç Arslān II as having sought refuge with the Byzantine emperor, who helped him by sending a large army.⁶¹ As there are no other accounts of another visit to Constantinople it may be the case that Kılıç Arslān II sought military help based on the terms of the earlier peace treaty, rather than travelling to the Byzantine court in person.⁶²

The Battle of Myriocephalon, near Eğirdir Lake and Isparta in south-west Anatolia (fig. 1.1), occurred in 572/1176 and ended Greek hopes of recapturing Anatolia from

⁵³ Vryonis (1975), p.46. The various groups of Türkmen were a source of instability to the Saljūqs and their neighbouring states, both Christian and Muslim.

⁵⁴ Beihammer (2011), p.603.

⁵⁵ Mecit (2014), p.157 suggests that Kılıç Arslān II went to seek an alliance rather than to submit to the Byzantine emperor.

⁵⁶ *Ibid.*, p.178 cites the 1932 Wallis Budge translation of Bar Hebraeus from the Syriac, p.287. Bosworth (2011), p.5 states that the Arab-Syriac scholar was also known as Ibn al-'Ibrī.

⁵⁷ Beihammer (2011), p.636. *Ibid.*, p.637 describes the role of spiritual son of the emperor as one of the most honourable positions a foreign sovereign could obtain in Constantinople.

⁵⁸ Magoulias (1984), p.69.

⁵⁹ Mecit (2014), p.65.

⁶⁰ Beihammer (2011), p.639.

⁶¹ Richards (2007), p.157. According to Ibn al-Athīr the conflict came about because Yaghī Arslān had seized Kılıç Arslān II's Saltuqid bride and her dowry. At the time the Byzantine army was approaching, Yaghī Arslān died, and after seizing some of his land, Kılıç Arslān II made peace with the son and successor of Yaghī Arslān, Ibrāhīm.

⁶² It is equally possible that Ibn al-Athīr's dates or chronology of the events are incorrect.

the Turks.⁶³ The Byzantine emperor Manuel Comnenus had his sights set on Konya and led a large army and baggage train eastward. The Byzantine army emerged from the battle defeated but largely intact and, after the payment of a large ransom, was able to return to Byzantine territory. Strangely, there is only one Muslim source for the battle, with the remainder being Byzantine sources lamenting the loss.⁶⁴ Following the battle, Kılıç Arslān II sent a *fath-nāma* (victory letter) describing his victory to Michael the Syrian.⁶⁵

Kılıç Arslān II's contemporary, and ruler of much of Syria to the south, was Nūr al-Dīn Maḥmūd (r. 541/1147-569/1174),⁶⁶ with whom he was alternately allied and at odds.⁶⁷ Kılıç Arslān II concentrated his efforts on consolidating power over the rest of Muslim-ruled Anatolia⁶⁸ and the death of Nūr al-Dīn in 569/1174 allowed him to pursue expansion of the Rūm Saljūq sultanate virtually unimpeded.⁶⁹ He took Amasya in 566/1171 and Sivas in 569/1174, but it was not until 578/1178 that Kılıç Arslān II finally completed the annexation of the Dānishmendid lands, with the conquest of Malatya.⁷⁰ Control of Malatya resulted in a large number of Syrian Orthodox Christians coming under the rule of the sultanate,⁷¹ but most subjects were Greek.⁷²

Concurrent with the expansion of the Rūm Saljūq territory under Kılıç Arslān II, the death of the Khwārazm Shāh II Arslān in Rajab 567/March 1172 allowed the *atābeg* (guardian) Shams al-Dīn Ildegiz effective control of Azerbaijan and much of the

⁶³ Bosworth (1996), p.213. See Mecit (2014), pp.167-8 for more details, and an argument that Manuel's policy was directed more towards the Holy Roman emperor than the Saljūqs.

⁶⁴ Hillenbrand (2007), p.153. Ibn Bībī's history starts in 588/1192 and the *al-Kāmil fī l-ta'rīkh* of Ibn al-Athīr makes no mention of the battle at all.

⁶⁵ Redford and Leiser (2008), p.85. Michael the Syrian, the Syrian Orthodox Patriarch of Antioch (1166-99), who was based near Malatya mentioned it in his chronicle. A monumental epigraphic *fath-nāma* was subsequently added to the Antalya city wall to mark the reconquest of the city by 'Izz al-Dīn in 612/1216.

⁶⁶ Bosworth (1996), pp.190-91. Abu 'l-Qāsim al-Malik al-'Ādil Nūr al-Dīn Maḥmūd ibn Zangī ruled Aleppo and Damascus following the death of his father, the *atābeg* Zangī.

⁶⁷ Cahen (1986), p.104.

⁶⁸ Mecit (2014), p.67.

⁶⁹ Hillenbrand (2007), p.153.

⁷⁰ Mecit (2014), p.72. The strategic importance of Malatya lay in the fact that it was the gateway to northern Syria.

⁷¹ Redford and Leiser (2008), p.85.

⁷² Leiser (2010), p.114 states that the Greek population appeared to enjoy justice and fair treatment according to the *History of the Patriarchs of the Egyptian Church* by Abū'l-Makārim ibn Barakāt, written in 604/1207. No mention is made of the significant Armenian population.

territory to the south and east.⁷³ Luther has argued that the Great Saljūq sultan Arslān Shāh had the semblance of power (*sūrat*) in the region in theory, but it was the *atābeg* who exercised real authority (*ma'nā*) in practice.⁷⁴ Ildegiz died at Nakhchivān in 570/1174-5 and his son Muḥammad Pahlawān ruled until his death in 582/1186-7.⁷⁵ It was during the reigns of these two rulers that the architectural style of Nakhchivān and Marāgha,⁷⁶ which became so influential in Anatolia, developed.

Mecit has suggested that Kılıç Arslān II founded Aksaray,⁷⁷ but it is more likely that it was a case of the partial Muslim colonisation of the existing Byzantine town of Coloneia, rather than the foundation of a new city.⁷⁸ The policy suggests a strong desire to increase the Muslim character of the main cities, and explains in part the construction of a greater number of mosques and minarets in the following decades. In addition, the economic situation in Anatolia improved significantly during the reign of Kılıç Arslān II. For a brief period of his rule the Armenian kingdom of Cilicia, with its capital at Sis (fig. 1.1), had a Muslim ruler, Mleh (d.1175 CE). Mleh was an ally of both Kılıç Arslān II and Nūr al-Dīn from 567/1171-2 against the Franks.⁷⁹

Following the Central Asian tradition of Turkish rulers, Kılıç Arslān II, like his father before him, divided the cities of the sultanate between his nine sons, a brother

⁷³ Bosworth (2011), p.159 states that Ildegiz was appointed governor of Arrān and Azerbaijan by the Great Saljūq sultan Mas'ūd.

⁷⁴ Luther (2001), p.110. The Sultan and the *atābeg* were closely related, as the sultan's mother was Ildegiz's wife and mother to his two sons. For a contemporary account of the campaigns and consolidation of power by Ildegiz see the translation of the *Akhbār al-Dawla al-saljūqiyya* by Bosworth (2011), pp.84-5 and pp.93-111. Luther (1971), p.397 describes the relationship between the *atābeg* and the sultan as a diarchy.

⁷⁵ Luther (2001), p.111. See Bosworth (2011), pp.112-121 and p.124 for a contemporary account of the life of Pahlawān. Luther (1971), pp.393-6 has an overview of his rule and the administrative changes that he made. For more details see Durand-Guédy (2010), p.269.

⁷⁶ Bosworth (1996), p.198 states that the Aḥmadīlīs ruled the restricted region of Marāgha and the nearby fortress of Rū'īn Diz between c.516/1122 until after 617/1220. Given the similarity of structures across the wider region, the term Ildegüzid is used in this thesis to describe the style developed by craftsmen in north-west Iran in the second half of the 7th/13th century. See *ibid.* for the names of the rulers and more details of their rule.

⁷⁷ Mecit (2014), p.61.

⁷⁸ Vryonis (1971), pp.184-5. A similar process also occurred in Kayseri and Sivas.

⁷⁹ *Ibid.*, pp.164-7. In 1173 CE Mleh declared Sis his capital. He was replaced by his nephew Ruben II (r.1175-1187 CE).

and a nephew in c.581/1185.⁸⁰ It appears likely that the division was a form of tanistry, as the Turks never adopted primogeniture for royal succession.⁸¹

According to Choniātēs, the prosperous Pontic cities of Ankara and Amasya went to Mas'ūd,⁸² Quṭb al-Dīn got Malatya and Aksaray⁸³ while Rukn al-Dīn was given Samsun and the Paphlagonian city of Tossia.⁸⁴ Uluborlu (Sozopolis), near the Byzantine border region was incorporated into the sultanate at some point after 575/1180 and was awarded to Ghiyāth al-Dīn. It was Ghiyāth al-Dīn who subsequently succeeded to the throne, although his brother Quṭb al-Dīn Malikshāh controlled a larger part of the sultanate.⁸⁵ Ibn al-Athīr's account of the division of the sultanate differs from that of Choniātēs in some respects and adds a little more information about others. He wrote that Elbistan went to Mughīth al-Dīn, Sivas and Aksaray were given to Quṭb al-Dīn, while Mu'izz al-Dīn rather than Quṭb al-Dīn got Malatya, and Tokat went to Rukn al-Dīn.⁸⁶

According to Choniātēs, it was following the capture of Konya in 586/1190 by the army of the Third Crusade, under the Holy Roman emperor Frederick I (Barbarossa) that Kılıç Arslān II was forced from the throne by his son Quṭb al-Dīn.⁸⁷ In contrast, Ibn al-Athīr suggests that prior to the arrival of Frederick I at Konya, Kılıç Arslān II was already under the effective control of Quṭb al-Dīn.⁸⁸ The two sources seem to agree on the general details of the encounter between the Crusaders and the Rūm Saljūqs, although Ibn al-Athīr gives more details. He describes how Frederick I and his troops were harassed by Iraj Türkmen once they entered the lands of the Rūm Saljūqs, which weakened them further. This was because the Byzantine emperor had

⁸⁰ Cahen (1986), p.104.

⁸¹ Fletcher (1979-80), pp.239-40. *Ibid.*, defines tanistry as the principle of succession whereby the most talented member of the royal clan should inherit the throne, commonly by murder or war. The division of the sultanate appears to have forced such a system on the various sons.

⁸² Magoulias (1984), p.286. According to Ibn al-Athīr it was Muḥyī al-Dīn who got Ankara. See the translation in Richards (2007), p.403. There is a degree of confusion regarding the exact details of the division of the sultanate, as the total number of sons and relatives given in Cahen (1986), p.104 exceeds the aggregate of the two most contemporary sources.

⁸³ Magoulias (1984), p.286 also states that he was awarded Kayseri but, given Ibn al-Athīr's account that Quṭb al-Dīn tried to force his father to take the city from Nūr al-Dīn, Choniātēs appears to have been mistaken in this instance. See Richards (2007), p.403.

⁸⁴ Magoulias (1984), p.286.

⁸⁵ Beihammer (2011), p.640.

⁸⁶ Richards (2007), pp.403-404.

⁸⁷ Magoulias (1984), p.66.

⁸⁸ Richards (2007), p.375.

withheld provisions from the Crusaders while they were crossing through his territory. Near Konya, Quṭb al-Dīn tried and failed to stop them. Barbarossa besieged Konya and told Kılıç Arslān II that he only wanted free passage and provisions.⁸⁹ This was granted and Frederick I left with some *amīrs* as hostages for security but they were still harassed by what are described as ‘thieves and others’, who are most likely to have been Türkmen nomads.⁹⁰ It has been suggested that the Crusaders sacked Konya,⁹¹ although neither Choniātēs or Ibn al-Athīr mention it.⁹² Ibn al-Athīr describes how Quṭb al-Dīn tried to force his father to give him Kayseri, but on the way there Kılıç Arslān II escaped and went to visit his various sons. Apparently he was not welcomed until he got to Ghiyāth al-Dīn at Uluborlu, who helped him retake Konya. They then went to Aksaray, but Kılıç Arslān II fell ill, so they returned to Konya, where he died in Sha‘bān 588/August 1192.⁹³

The main rivals of the Rūm Saljūqs in the lands to the south of Anatolia were the Ayyūbids, who ruled Syria, Egypt and Yemen. They were descended from Ayyūb, born near Dvin in Armenia of the Kurdish tribe of the Hadhbānī,⁹⁴ but it was his son Ṣalāḥ al-Dīn who was the real founder of the dynasty. The Ayyūbid polity was a confederation of autonomous principalities.⁹⁵ In 566/1171 Ṣalāḥ al-Dīn suppressed the Fāṭimids and thereafter ruled Egypt as well as Syria. His power lay in the Kurdo-Turkish army. In 583/1187 he crushed the Franks at Ḥaṭṭīn and brought Jerusalem back under Muslim rule after 80 years of Crusader control.⁹⁶ Following the death of Ṣalāḥ al-Dīn in 589/1193 complicated intrigues brought al-Malik al-‘Ādil

⁸⁹ Choniātēs states that during this period the Crusaders camped outside the city walls. See the translation in Magoulias (1984), p.228.

⁹⁰ Richards (2007), p.375. *Ibid.*, p.376 states that Kılıç Arslān II wrote to Ṣalāḥ al-Dīn to apologise, saying he wished to stop the Crusaders but that he was too weak due to his sons ruling him and keeping him prisoner, having abandoned him and cast off their allegiance to him.

⁹¹ Loud (2010), p.110, in a translation of a contemporary account, describes how Frederick’s son, the duke of Swabia, captured Konya and killed all the citizens. See *ibid.*, p.100-114 for more details of the Crusaders’ experiences with the Turks.

⁹² Peacock (2013)b, p.204 states the *Tārikh-i āl-i Saljūq* refers to the destruction caused by the Franks. The true extent of the damage done by the Crusaders remains unclear.

⁹³ Richards (2007), pp.403-404.

⁹⁴ Cahen (1960), p.796.

⁹⁵ Humphreys (1989), p.169.

⁹⁶ *Ibid.*, p.797.

(d.615/1218) to the head of the confederation.⁹⁷ The *jihād* that Ṣalāḥ al-Dīn successfully waged against the Crusaders was the background to the foreign and military policy of the Rūm Saljūqs, and the titulature adopted on their foundations.

Succession crises and the reunification of the sultanate

Following the death of Kılıç Arslān II, Quṭb al-Dīn killed Maḥmūd and then died soon afterwards. Subsequently Rukn al-Dīn and Mas'ūd fought over his cities and territories. Rukn al-Dīn won and let Mas'ūd keep most of his lands.⁹⁸ After taking Sivas, Rukn al-Dīn went to Kayseri and Aksaray. He subsequently laid siege to Konya and took it from Ghiyāth al-Dīn,⁹⁹ who was expelled and forced to lead what has been described as the life of a homeless prince wandering from one court to another.¹⁰⁰ The best account of the time that Ghiyāth al-Dīn spent in Constantinople is to be found in the work of Niketas Choniātēs. He describes how Rukn al-Dīn attacked Ghiyāth al-Dīn soon after he entered Konya and he fled as a fugitive to Lewon I, King of Cilician Armenia (r.1198-99–1219 CE). Lewon refused to give Ghiyāth al-Dīn military support so, following the example of his father and grandfather, he went to the Byzantine emperor.¹⁰¹ While he was living in Constantinople with his sons 'Izz al-Dīn and 'Alā' al-Dīn, Ghiyāth al-Dīn married the daughter of Manuel Mavrozomēs, a senior Byzantine courtier.¹⁰² Ghiyāth al-Dīn was simultaneously a Greek-speaking Christian as well as a Persian-speaking Muslim,¹⁰³ characteristics which encapsulate the syncretism and hyphenation that were so typical of the elites of the region from the 6th/12th century onwards.¹⁰⁴

⁹⁷ *Ibid.*, p.162. See Cahen (1960), pp.796-807 for a good, if somewhat dated, overview of the origins and rule of the Ayyūbids. The main primary sources for the Ayyūbids are the chronicles of Ibn Wasil and Ibn al-Athīr.

⁹⁸ Magoulias (1984), p.284. The rather biased Choniātēs wrote that Mas'ūd loathed Ghiyāth al-Dīn because he had a Christian mother.

⁹⁹ Richards (2007), p.404.

¹⁰⁰ Beihammer (2011), p.640 cites the opinion given in Cahen (1968), pp.111-115. Yalman (2012), p.168 refers to Ibn Bībī's account of Ghiyath al-Dīn's stay at the Artuqid court at Āmid (Diyarbakır).

¹⁰¹ Magoulias (1984) p 286. Choniātēs goes as far as to suggest that Ghiyāth al-Dīn regarded Manuel as a spiritual anchor.

¹⁰² *Ibid.*, p.343.

¹⁰³ Shukurov (2013), p.128 adds that Ghiyāth al-Dīn was baptized and adopted by the Byzantine emperor Alexius III Angelos at some point between 1195 and 1203 CE.

¹⁰⁴ Dadoyan (2013), p.4 and p.53 refers specifically to the Armenians, but the idea of an overlapping multiplicity of identities, such as the Greco-Turkic Rūm Saljūq royal family,

After Rukn al-Dīn captured Konya, he went to Niksar and Amasya. In 597/1200-1 he captured Malatya from Mu‘izz al-Dīn, who fled to his father-in-law, the Zangid al-‘Ādil. Rukn al-Dīn then went on to take Erzurum from the last of the Saltuqids in the summer of 597/1201.¹⁰⁵ By this point Rukn al-Dīn had united all his brothers’ possessions except Ankara, because of its strong and inaccessible nature. He besieged it for three years until the city surrendered in 601/1204-5, and he ordered that his brother Mughīth al-Dīn be assassinated. Shortly afterwards Rukn al-Dīn died.¹⁰⁶ He had succeeded in re-establishing the unity of the Rūm Saljūq realm which had been lost following the division of the sultanate by his father. Having consolidated the Turkish-held territories he then expanded into Georgia,¹⁰⁷ but was defeated by the Georgians at the Battle of Basiani.¹⁰⁸ Due in part to his almost continuous internecine struggle to reunite the sultanate under his overlordship, Rukn al-Dīn does not appear to have founded any religious monuments.¹⁰⁹ However, he was responsible for the fortification of Konya in 600/1203-4.¹¹⁰

It was during Ghiyāth al-Dīn’s first period as sultan (588-593/1192-1197)¹¹¹ that the last Great Saljūq sultan Ṭoghrīl died, at the hands of the Khwārazm Shāh Tekesh, at Rayy in Rabī‘ 590/March 1194. This resulted in the division of the remaining lands of the Great Saljūqs between Tekesh’s son Yūnus Khān, who got Iraq, and his *amīrs*, amongst whom the provinces were divided.¹¹² This left the Khwārazm Shāh as the

clearly applied beyond the one ethno-linguistic group. Peacock (2013)b, p.210 expresses similar ideas.

¹⁰⁵ Richards (2008), p.60.

¹⁰⁶ Richards (2007), p.404.

¹⁰⁷ Mecit (2014), p.86.

¹⁰⁸ Peacock (2015), p.246. He goes on to suggest that the Rūm Saljūqs subsequently expressed no interest in expanding eastward until ‘Alā’ al-Dīn annexed the Mengüjekid lands. I am indebted to Dr. Peacock for allowing me to consult the proofs of this chapter, currently in press.

¹⁰⁹ *Ibid.*, p.88 cites a titular inscription on the citadel in Niksar as one of the rare examples. *Ibid.*, p.87 describes Rukn al-Dīn as having achieved nominal overlordship, as several of his brothers, and other lords, ran their own semi-independent provinces but recognised him.

¹¹⁰ Rogers (1995), p.967. Further work on the fortifications of the city and the citadel was completed during the reign of ‘Izz al-Dīn in 610/1213-14.

¹¹¹ Bosworth (1996), p.213.

¹¹² Luther (2001), pp.162-164. See Bosworth (2011), pp.126-128 for a translation of the more detailed but fundamentally similar account of the death of Ṭoghrīl from the *Akhbār al-dawla al-saljūqiyya*.

major power in the wider region. In contrast, by the end of the 6th/12th century the Rūm Saljūq sultanate had descended into chaos.¹¹³

According to Ibn al-Athīr, Ghiyāth al-Dīn fled Constantinople in 601/1205 with his father-in-law Manuel Mavrozomēs as a result of the threat of Fourth Crusade forces, to one of the latter's fortresses on his landed estates. Ghiyāth al-Dīn regained his throne in Konya, replacing his nephew Kılıç Arslān III,¹¹⁴ and continued the ongoing process of imperial expansion. He captured the important sea port of Antalya in Sha'bān 603/March 1207 from Aldobrandini, a Tuscan adventurer in the employ of the Byzantines.¹¹⁵ Following his victory Ghiyāth al-Dīn declared all merchants in Antalya tax-free,¹¹⁶ presumably in an attempt to reinvigorate the economy and to compete with Cyprus. In 605/1208-9 he planned a further expansion with an attempted incursion into the lands of the Latin Armenian Kingdom of Lewon I in Cilicia, but a peace was negotiated by al-Malik al-ʿĀdil, the head of the Ayyūbid confederacy.¹¹⁷ The following year Lewon I gave land on his western border to the Teutonic Knights, including Rūm Saljūq-controlled Karaman (Larende) to the Hospitallers, in an attempt to persuade the Crusaders to expand at the expense of the Rūm Saljūqs.¹¹⁸ This threat to Konya, only 100km away over a flat plain, may be part of the reason that ʿIzz al-Dīn focused his major architectural patronage on Sivas, to the east.

Theodore Laskaris was the Laskarid emperor of Nicaea, one of the successor states to the Byzantines following the loss of Constantinople to the Latin forces of the Fourth Crusade, and the establishment of the Latin empire. As a result of an attack on the city of Alaşehir by the Turks, Theodore Laskaris fought a battle there with Ghiyāth al-Dīn in 607/1211. The sultan won but was killed in the process of pursuing

¹¹³ Peacock (2006), p.133.

¹¹⁴ Richards (2008), p.83. Kılıç Arslān III was sultan for only a few months following the death of Rukn al-Dīn. Yıldız and Şahin (2013), pp.178-179 state that the population of Konya refused to surrender the city to Ghiyāth al-Dīn upon his return from Constantinople in 601/1205 and he had to force his way into the city.

¹¹⁵ Richards (2008), p.121. Choniātēs describes a failed attempt to besiege the city in the spring of the previous year that only lasted sixteen days. See Magoulias (1984), p.351.

¹¹⁶ Redford and Leiser (2008), p.92.

¹¹⁷ Dadoyan (2013), p.179. The resultant peace was based on an agreed policy of non-intervention.

¹¹⁸ Peacock (2015), p.247. The Hospitallers subsequently occupied the city for the following six years.

the Greek forces, which led to the subsequent withdrawal of the Turks.¹¹⁹ The chronicler Niketas Choniates wrote about what he described as the victory of Laskaris, but it has been suggested that he did not want to exaggerate its importance by ending his history with an account of the battle.¹²⁰

As this discussion of the period following the division of the sultanate has shown, the lands under the control of the various members of the Rūm Saljūq family were in a state of chaotic instability during the final decade of the 6th/12th century. As a result there was very little building activity of any note. It was not until the second reign of Ghiyāth al-Dīn (601-608/1205-1211)¹²¹ that the programme to redevelop the urban and commercial infrastructure that had begun under Kılıç Arslān II was able to start again in earnest. Peacock has argued that the shrine of the Umayyad *ghāzī* Baṭṭāl at Seyitgazi was built by Ghiyāth al-Dīn following his release from captivity in Constantinople, however all the surviving structures date from the Ottoman period.¹²²

The imperial ambitions of sultan ‘Izz al-Dīn Kay Kāwūs I

Although he was the oldest of the three sons of Ghiyāth al-Dīn, it was by no means certain that ‘Izz al-Dīn Kay Kāwūs I would rule the Rūm Saljūq sultanate at the death of his father. There are no records of the early years of ‘Izz al-Dīn’s life so the year of his birth remains unknown, but he is known to have had a Greek grandmother.¹²³ Based in part on the time he spent in Constantinople with his father as a child, it has been suggested that ‘Izz al-Dīn had a dual Christian and Muslim identity.¹²⁴ ‘Izz al-Dīn had been installed in Malatya by Ghiyāth al-Dīn and had moved to Kayseri by 608/1211 when he was chosen, over his brother ‘Alā’ al-Dīn, to be sultan by the majority of *amīrs* upon the death of his father at the battle of

¹¹⁹ Cahen (2001), p.49.

¹²⁰ Treadgold (2013), p.435.

¹²¹ Bosworth (1996), p.213.

¹²² Peacock (2014), p.279. He suggests that it may have been endowed or restored to thank the Dānishmendid Türkmen chiefs who had played a key role in securing Ghiyāth al-Dīn’s restoration to the throne.

¹²³ Magoulias (1984), p.286. The Byzantine court chronicler Niketas Choniates wrote that Ghiyāth al-Dīn’s brother Mas‘ūd loathed him because he had a Greek mother.

¹²⁴ Shukurov (2013), p.133. He goes on to state that this dual religious identity would have been in addition to the sultan’s Turko-Persian and Greek ethnic identities as well.

Alaşehir.¹²⁵ Although most of the *amīrs* supported him as sultan, there was some support for his younger brother, and eventual successor, ‘Alā’ al-Dīn. ‘Izz al-Dīn was proclaimed sultan in Kayseri¹²⁶ on the 7th Muḥarram 608 /28th June 1211 but it took three years to completely subdue his brother’s opposition to his rule.¹²⁷ In 605/1211 it was Sayf al-Dīn Chashnigīr who returned Ankara to ‘Izz al-Dīn during the conflict with ‘Alā’ al-Dīn.¹²⁸ After this there were no other major internal difficulties during his reign.¹²⁹ Later in the year following his accession, he signed a peace treaty with Theodore I Laskaris, emperor of Nicaea.¹³⁰ This early act demonstrated ‘Izz al-Dīn’s pragmatism and, regardless of the *jihād* epigraphy, his desire to expand east and south into Ayyūbid-ruled lands rather than to focus his attention on expanding west into Christian-held territory.¹³¹ Despite the presence of Greek women in the Rūm Saljūq court, and the détente with the Byzantine rulers, it must not be assumed that all was well for the large Christian population over which he ruled. In 609/1212 he wrote to Ibn al-‘Arabī¹³² for advice about how to treat his Christian subjects. The harsh counsel sent back is claimed by Vryonis to have led to harsh oppression. However, given the overwhelmingly Christian population of the sultanate, and the dual Muslim/Christian identity of the court, it is hard to believe that they were all treated as harshly as he suggests.¹³³

As part of the process of economic stabilisation, in addition to the creation of a settled western frontier to allow for campaigning against the Ayyūbids to the south and east, between 610/1213 and 613/1216 ‘Izz al-Dīn negotiated a trade agreement

¹²⁵ Cahen (2001), p.49.

¹²⁶ Mecit (2014), p.100. Peacock (2015), p.249 notes that the departure of the Cilician Armenian king Lewon I’s troops from the siege of Kayseri was a major factor in the collapse of ‘Alā’ al-Dīn’s attempt to stop ‘Izz al-Dīn becoming sultan.

¹²⁷ Redford and Leiser (2008), p.93. Cahen (2001), p.49 suggests that the elimination of the threat to his rule was achieved primarily by laying siege to ‘Alā’ al-Dīn in Ankara. ‘Izz al-Dīn then imprisoned him.

¹²⁸ Blessing (2014), p.195.

¹²⁹ Cahen (1978), p.813.

¹³⁰ Cahen (2001), p.50.

¹³¹ Mecit (2014), p.104 states that ‘Izz al-Dīn had no interest in destroying the empire of Nicaea and expanding the realm of Islam.

¹³² Ibn al-‘Arabī (1165-1240 CE) was a most revered Sufi shaykh and dispensed spiritual advice to the sultan. For more details see Yıldız and Şahin (2013), p.174.

¹³³ Vryonis (1971), p.225. Vryonis comes across as rather anti-Turkish in this statement. Yıldız and Şahin (2013), p.189 states that the letter exhorted the sultan to protect his servants from oppression but discussed the need for the reinforcement of the *dhimmi* regulations.

with Hugh I, the Lusignan king of Cyprus.¹³⁴ The loss of the port of Trebizond to the newly established Pontic Comnenid state, in around 601/1204, ended Rūm Saljūq access to Black Sea shipping and caused a commercial crisis in the sultanate.¹³⁵ It was imperative for the economic well-being of the sultanate that access was re-established, and on 25th Jumada 611/1st Nov 1214 ‘Izz al-Dīn captured the Black Sea port of Sinop.¹³⁶ Following this conquest ‘Izz al-Dīn assumed a new title, *al-ghālib bi-āmr Allāh* (the victor by God’s command) and shortly afterwards, in 611/early 1215, he ordered the Sinop fortifications to be rebuilt.¹³⁷ The capture of the city was due in part to the Comnenid rulers siding with ‘Alā’ al-Dīn in the succession struggle¹³⁸ as well their recent capture of Trebizond. Ultimately it was a commercial rather than religiously motivated campaign and it was an essential element of the economic regeneration of the Rūm Saljūq-ruled lands.

In 611/1214 ‘Izz al-Dīn sent a request to the ‘Abbāsīd caliph al-Nāṣir li-Dīn Allāh to join the caliphal *futuwwa*, which was accepted.¹³⁹ This was near the point that the *futuwwa* movement was at its peak.¹⁴⁰ Given ‘Izz al-Dīn’s desire to claim a right to rule over a larger region than he did, based in part on his Saljūq heritage, it would make sense that he would wish to ensure the favour of the caliph.¹⁴¹ Following the capture of Sinop, and the concomitant access to the Black Sea, it was to the Mediterranean ports of the south coast that ‘Izz al-Dīn’s attention turned. Antalya

¹³⁴ Cahen (2001), p.50. Savvides (1981), pp.139-140 gives a date of 1214 for the Cyprus pact and notes that Cypriot letters show that tradesmen from there were working freely in the Rūm Saljūq lands.

¹³⁵ Peacock (2006), p.137.

¹³⁶ Cahen (2001), p.51.

¹³⁷ Redford (2010), p.137 and p.134.

¹³⁸ Redford and Leiser (2008), p.96

¹³⁹ Goshgarian (2013), p.230.

¹⁴⁰ Pancaroğlu (2013), p.64 states that the *futuwwa* movement acted as a framework for political cohesion around the caliph, following the post-Great Saljūq disintegration. It is not clear, however, how successful it was in practice. Goshgarian (2013), p.228-230 describes *futuwwa* as a set of moral ideas and practices. She goes on to state that it was a widespread urban phenomenon of brotherhoods and by the 6th/12th century it was closely connected with the marketplace. In 1207 CE, 25 years after his investiture, the caliph al-Nāṣir li-Dīn Allāh subordinated it to his authority and began distributing the garments, primarily the *sarāwīl* of *futuwwa* (trousers of justice), to the Ayyūbid rulers.

¹⁴¹ Goshgarian (2013), p.230 states that ‘Izz al-Dīn received the belt of *muruwwa*, the *sarāwīl* of *futuwwa* and the book of *futuwwa* from the caliph. Yıldız and Şahin (2013), p.180 note the confusion in the chronology that Ibn Bībī gives. They suggest that the date of the *futuwwa-nāma* of 1212 CE indicates ‘Izz al-Dīn sent the request soon after he had become sultan. Such an act may have helped shore up his shaky hold over the throne.

had been under Rūm Saljūq rule for a few years in the first decade of the 7th/13th century before the largely Greek population of the city rebelled and took control of the city for themselves. As the primary point of access to the Mediterranean, and the sea trade in timber and slaves with Egypt, it was again commercial rather than religious motives that directed the military policy of ‘Izz al-Dīn. The siege of Antalya began on 23rd Sha‘bān 612/ 24th December 1215¹⁴² and the city was captured on 23rd Ramaḍān 612/ 22nd January 1216. As a result he adopted the title *sulṭān al-baḥrayn* (sultan of the two seas) and ordered the rebuilding of the walls of Antalya. The conquest was recorded in a *fath-nāma* inscribed onto sections of reused column shafts set into the city walls.¹⁴³

The capture of the two cities resulted in the expansion of the lucrative trade from the Black Sea to the Mediterranean Sea. This led to an economic revival across the sultanate, but especially in Sivas, because the city was also at the intersection with the east – west caravan trade. It seems that ‘Izz al-Dīn wanted to increase the prestige of Sivas and in 614/1217-18 he founded a large hospital and royal tomb in the centre of the city.¹⁴⁴ The capture of the two sea ports by ‘Izz al-Dīn led to an increased need for a chain of caravanserais between the major cities to be constructed.¹⁴⁵ ‘Izz al-Dīn concluded a marriage alliance with the Mengüjekid dynasty and married the daughter of Bahrāmshāh ibn Dāwūd, the ruler of Erzincan, prior to his campaign into Syria.¹⁴⁶ This appears to have been a political decision to ensure a peaceful eastern frontier in preparation for his planned expansion into Ayyūbid-ruled Aleppo. In 612/1216, following the death of the Ayyūbid ruler al-Zāhir, he organized an anti-Ayyūbid coalition with the help of Badr al-Dīn Lu’lu’ (d. 657/1259), the ruler of al-Mawṣil

¹⁴² Redford and Leiser (2008), p.95.

¹⁴³ *Ibid.*, p.95. The Antalya inscription includes a title that ‘Izz al-Dīn did not use anywhere else; *maẓhar kalimat Allāh* (the manifestation of the word of God). This is a most unusual, and almost un-Islamic title. The same title was used by Kılıç Arslān II in Konya.

¹⁴⁴ Çetintaş (1953), p.14. See chapter four for a detailed analysis of the hospital and tomb complex. Sivas is also the site of the most decorative of the early attenuated brick minarets, added to the Great Mosque in 609/1213. See chapter two, pp.124-149 for details.

¹⁴⁵ Rogers (1995), p.965. The process had started under Kılıç Arslān II, with the Alay han, and the redevelopment of infrastructure continued under his son Rukn al-Dīn Sulaymān II (r.593-600/1197-1204) who built a bridge near Kayseri on the road to Kirşehir in 599/1202-3.

¹⁴⁶ Mecit (2014), p.106 cites Ibn Bībī, from Duda (1959), p.77.

(Mosul).¹⁴⁷ The same year ‘Izz al-Dīn attacked northern Cilicia and occupied castles on behalf of Bohemond IV, the Christian ruler of Antioch.¹⁴⁸ These included the fortress of Gaban which he took in 613/1216.¹⁴⁹ He occupied almost all the Armenian possessions in the region of Isauria down to Seleucia, and the following year signed a peace treaty with Lewon, the Armenian king of Cilicia.¹⁵⁰

In 615/1218 ‘Izz al-Dīn took control of Lu’lu’a (between Sis and Kayseri), a powerful base that controlled the profitable silver mines in its vicinity. In the same year, along with his Ayyūbid vassal Afḍal, he occupied the north of the province of Aleppo, but he was forced to retreat to Elbistan and abandon all his conquests in Syria by the Ayyūbid of Iraq, al-Ashraf.¹⁵¹ Aleppo had previously been controlled by ‘Izz al-Dīn’s uncle on his father’s side¹⁵² and this led him to believe that the upstart Kurdish Ayyūbids had a less valid claim to rule. He was probably emboldened as a result of the declining power of the Ayyūbids following the death of Ṣalāḥ al-Dīn in 589/1193.¹⁵³ It may have been because ‘Izz al-Dīn had been *malik* of Malatya, the city which controlled the northern trade routes into Syria, that he exhibited a greater focus on the areas to the south and south-east of the sultanate than previous sultans had. In addition, his agreement with the Armenians not to intervene in Karaman, a necessary concession in order to become sultan, meant that a large number of Türkmen who would normally have spent time in that region needed to be kept occupied, preferably outside the geographical limits of the sultanate. The two factors combined may explain his level of involvement in the lands to the south.¹⁵⁴ Between 598/1202 and 622/1225 Mughith al-Dīn, the Saljūq ruler of Erzurum and brother of Rukn al-Dīn, became a vassal of the Ayyūbids rather than of the Rūm

¹⁴⁷ Cahen (1978), p.813. Bosworth (1996), p.193 states that Badr al-Dīn Lu’lu’ was a freedman of the Mosul Zangids and was of Armenian servile origins.

¹⁴⁸ Cahen (2001), p.51.

¹⁴⁹ Dadoyan (2013), p.180 states that Gaban was subsequently recovered at great cost by Lewon I (d.1219 CE), the Latin Armenian king of Cilicia.

¹⁵⁰ Savvides (1981), p.146.

¹⁵¹ Cahen (2001), p.51. See Bosworth (1996), p.70-75 for details of the various rulers within the Ayyūbid confederacy.

¹⁵² Mecit (2014), p.107.

¹⁵³ *Ibid.*, p.xvii.

¹⁵⁴ The two related points were suggested by Dr. Andrew Peacock, (personal communication, 11th July 2014).

Saljūqs. This, along with his also having accepted Georgian suzerainty, is likely to have angered ‘Izz al-Dīn,¹⁵⁵ especially given his ongoing conflict with the Ayyūbids.

As part of the drive to increase the fiscal state of the economy ‘Izz al-Dīn signed a treaty with the Venetian *podesta* in Constantinople.¹⁵⁶ The date of the treaty is unknown but it is mentioned in a later treaty that ‘Alā’ al-Dīn signed with the Venetians in Muḥarram 617/March 1220.¹⁵⁷ At some point in 616/1219-1220, ‘Izz al-Dīn was forced by illness to abandon a march to Malatya, from where he had planned to attack the lands of al-Ashraf. He then retreated and died of consumption.¹⁵⁸ Arik has argued that Sivas was ‘Izz al-Dīn’s favourite city and the place where he died.¹⁵⁹ If it was his favourite city, it may go some way towards explaining why he chose Sivas to be the site of his main architectural foundation, including his tomb.¹⁶⁰

Although not entirely devoid of failure, ‘Izz al-Dīn’s rule saw a number of significant political and military victories as well as a rapid rise in the scale of the architectural redevelopment of the sultanate. It was a period in which the Rūm Saljūq

¹⁵⁵ Peacock (2006), pp.136-137.

¹⁵⁶ The *podesta* was the high official in charge of Venetian affairs in Constantinople. Beihammer (2011), p.642 notes that letters to the *podesta* from ‘Izz al-Dīn, as well as those to the king of Cyprus, included Byzantine imperial honorifics. It appears that their use was audience-specific, as they do not occur in any of the monumental epigraphy on buildings, which are entirely Islamic in character.

¹⁵⁷ Martin (1980), p.321. It is this document, among other evidence, that demonstrates that by Muḥarrām 617/March 1220 at the latest, ‘Izz al-Dīn had died.

¹⁵⁸ The most contemporary literary account of his death is to be found in *al-Kāmil fī ‘l-ta’rīkh* by Ibn al-Athīr (d.630/1233). He states that the sons of ‘Izz al-Dīn were too young to rule and he may have designated ‘Alā’ al-Dīn as his successor as his illness worsened, although he does not give a source for this opinion. See the translation in Richards (2008), p.199. There is a degree of inconsistency in the secondary literature regarding the date of ‘Izz al-Dīn’s death. Bosworth (1996), p.213 gives the date of death as 2nd December 1220; however Martin (1980), p.324 mentions coins in the name of ‘Alā’ al-Dīn dated 616AH (19th March 1219-7 March 1220 CE) and a treaty with Venice signed in Muḥarram 617/ March 1220, both of which indicate that ‘Izz al-Dīn had died by March 1220 CE at the latest. This suggests that the date on the tomb in Sivas, and used by Bosworth, is the completion date not the death date. Savvides (1981), p.151 gives a date of early 1220 for his death.

¹⁵⁹ Arik, O. (2008), p.46 makes the claim for Sivas being where ‘Izz al-Dīn spent his last days but does not provide any reference for the source of the information. Such a location is plausible given Ibn al-Athīr’s account that he was forced to turn back from a march to Malatya. See the translation in Richards (2008), p.199.

¹⁶⁰ See chapter four for a detailed analysis of the complex and the importance of Sivas in the early 7th/13th century.

sultanate became a major power on land and sea, and had a vibrant economy.¹⁶¹ It was the economic expansion in the early 7th/13th century that resulted in it becoming the wealthiest power in the region.¹⁶² The commercial and military foreign policy pursued by ‘Izz al-Dīn supports the view that he had rejected the notion of geographical limits on the sultanate.¹⁶³ This is also manifested in the wide range of sources employed in the architecture constructed during his reign. Having said that, it was the late 6th/12th century that saw significant frontier fortresses fall into Saljūq hands, including Dorylaion (Eskişehir) and Uluborlu (Sozopolis). In Peacock’s view, it was the period following the annexation of Denizli (Laodikea) and the death of Ghiyāth al-Dīn Kay Khusraw in 608/1211 that saw the Saljūq advance halted.¹⁶⁴ It may be the case that during the reign of ‘Izz al-Dīn the rising economic power of the sultanate, rather than increased geographic area, allowed him to achieve in actuality the role of an autocratic Perso-Islamic ruler which had been claimed by earlier sultans.¹⁶⁵

Conclusion

The Muslim dynasties of Anatolia were closely connected to the wider Arab and Persian world through complex networks of trade, intermarriage and the migration of scholars, craftsmen and religious figures. By similar means, the Rūm Saljūq elites in particular were arguably even closer to the Byzantines,¹⁶⁶ as it was in the Christian west, rather than the Muslim south, that the elites generally sought refuge. Although the Rūm Saljūqs were a vigorous successor state to the Great Saljūqs,¹⁶⁷ there were extensive examples of defection between the Turks and the Byzantines throughout the 5th/11th to 7th/13th centuries. These happened at the highest levels of the court and

¹⁶¹ Savvides (1981), p.151. Cahen (1978), p.813 concurs and states that his rule saw the real development of the major architectural typologies in Anatolia and of cities. This view, while broadly accurate, appears to downplay the role of Kılıç Arslān II who founded the earliest surviving caravanserai and palace.

¹⁶² Mecit (2011), p.69 cites the medieval author Jean de Joinville, who stated that the sultan of Konya was the richest ruler in the pagan world.

¹⁶³ Korobeinikov (2013), p74.

¹⁶⁴ Peacock (2014), p.270.

¹⁶⁵ Mecit (2014), pp.108-109 supports this view, noting that ‘Izz al-Dīn felt able to execute leading *amīrs* in a way previous sultans had not been able to do.

¹⁶⁶ Bosworth (1995), p.956 notes that the intermarriage of Turks and Christians led to a new generation of mixed ancestry, called *mixovarvaroi*.

¹⁶⁷ Black (2011), p.111.

also involved the shifting loyalties of lords of the border regions.¹⁶⁸ Although there were numerous Byzantine officials at the court in Konya, the bureaucracy of the Rūm Saljūq sultanate had a strongly Persianate character.¹⁶⁹ In the east, the military actions of the Khwārazm Shāh Muḥammad led to the dismantling of the political structure that had been created by the ‘Abbāsids, leaving no role for the bureaucracy in Iran.¹⁷⁰ This may well have been the primary cause of the influx of scholars and bureaucrats into the Rūm Saljūq sultanate, at least during the early 7th/13th century, up to the death of ‘Izz al-Dīn.

The architectural connections examined in the following chapters reflect the wider cultural, and in some cases linguistic, milieu of the time. In regard to the lands of *al-Jibāl*,¹⁷¹ under the control of the Ildegüzids, the connections were particularly strong, but they can be seen to have extended to the lands of the Ghūrīds in Khurāsān, and even as far east as the Khwārazmshāh’s capital at Gurganj.¹⁷² The great majority of Anatolia in the late 6th/12th and early 7th/13th centuries must be seen as a part of the wider post-Great Saljūq Turko-Persian world rather than viewed in isolation. Such an approach makes the strongly Persianate character with which the predominantly lithic architectural remains of the early period are imbued all the more comprehensible.

¹⁶⁸ The various defections and interactions are generally attested to in the Greek sources, such as Malakes, Niketas Choniātēs and John Kinnamos, as well as in the chronicle of Ibn al-Athīr. See Beihammer (2011), pp.597-691 for a detailed analysis of the more significant cases, along with an explanation of the context and possible reasons. *Ibid.*, pp.600-601 states that there were a great number of Greek court officials in Konya, and features of Byzantine imperial ideology were incorporated into Rūm Saljūq ceremonies of lordship.

¹⁶⁹ Redford (2010), p.135. Persian was the administrative language of the sultanate.

¹⁷⁰ The process is described in Barthold (1968), pp.375-380.

¹⁷¹ *al-Jibāl* refers to the area roughly contiguous with modern day Azerbaijan and the north-west of Iran. Bosworth (2011), p.1 notes that the region was also referred to as *‘Irāq-i ‘Ajam* by Muslim geographers.

¹⁷² Connections to Khurāsān are particularly evident in the minaret of the Great mosque, and the hospital and tomb of ‘Izz al-Dīn, in Sivas. See chapter two, pp.124-149, and throughout chapter four, for detailed analyses of these connections.

Evolution of the study of the Islamic architecture of Anatolia

Pancaroglu has argued that the blanket application of the term Rûm Saljûq excludes non-Turk and non-Muslim populations and dynasties, both Byzantine and Armenian, as well as eclipsing the Dānishmendid, Saltuqid, Mengüjekid and other dynasties.¹⁷³ Single catch-all terms are inevitably imperfect, especially at the periphery and under particularly close examination, but they remain useful.¹⁷⁴ When dealing with the cultural output generated under the patronage of other dynasties, they are always referred to directly in the following chapters of this study. However, the Rûm Saljûqs were the regional hegemon for most of the period of this study, and by the early 7th/13th century both the patrons and the style of the buildings themselves could increasingly be identified with that dynasty alone.

The idea of Turkish art was developed by Austrian scholars in the early 20th century. It was Strzygowski who rallied against the Rome-centric approach of European art historians. He sought to undermine the classical bias of the humanist disciplines and had a deep-seated suspicion of texts and contexts.¹⁷⁵ In his earlier works he saw the Saljûqs of Anatolia as *Träger* (carriers) of Islamic art from Iran and Syria rather than innovators.¹⁷⁶ Strzygowski has been criticized by scholars in Turkey, particularly Aslanapa, for what they described as the excessive importance that he attached to Armenian art.¹⁷⁷ This possibly reflects the corrosive nature of Turko-centric nationalism, rather than necessarily indicating any genuine flaws in Strzygowski's understanding of the construction trade during the 6th/12th and 7th/13th centuries in

¹⁷³ Pancaroglu (2007), p.67 goes on the state that the term Saljûq encourages a mono-cultural perspective. Such a view is of course greatly at odds with the reality of the situation.

¹⁷⁴ No single term is sufficient to describe such a culturally and politically diverse area with a multiplicity of denominations, dynasties and polities. There were fairly fluid and generally ill-defined border zones, along with far-reaching connections to other regions across the land and the sea.

¹⁷⁵ Pancaroglu (2007), p.69 states that it was Strzygowski who expanded the geography of art history to cover much of Asia. This article is by far the best explanation of the origins and development of the study of the art and architecture of the lands now comprising the modern state of Turkey, and only a few of the key points are summarised here.

¹⁷⁶ Strzygowski (1917), p.299. Pancaroglu (2007), pp.72-73 describes how he later went on to argue in an article entitled "Türkler ve Orta Asya San'atı Mesalesi" (Turks and the Question of Central Asian Art) in the Turkish journal *Türkiyat Mecmuası* in 1926-7 that the essence of Turkish art was unchanged by Iran, Iraq, Syria, Asia Minor or Egypt, and no longer dismissed the Saljûqs as mere "carriers". Such an extreme position may have been in part due to the nature of the audience in the newly formed Turkish Republic.

¹⁷⁷ Pancaroglu (2007), p.78.

Anatolia. Later, Strzygowski's student, and then colleague, Glück went as far as to reject the possibility of any non-Turkish elements in Saljūq and Ottoman art.¹⁷⁸ A more nuanced understanding of the field is seen in the writings of Diez, who repeatedly noted as early as 1946, in the journal *Türk Sanatı*, the diverse background of craftsmen, painting a multicultural picture of arts in medieval Anatolia.¹⁷⁹ In 1917 Van Berchem and Edhem published a number of the inscriptions of the region, but the first major survey of the architecture of Anatolia was in *Monuments turcs d'Anatolie*, published by Gabriel in 1934. Although it has a fairly limited selection of the surviving buildings, there are detailed descriptions, fairly accurate ground plans and extensive illustrations of the structures that are included.¹⁸⁰ Subsequently there was an emphasis on morphology and typology in the literature of the latter half of the 20th century. This formalist method of enquiry created what Pancaroğlu has described as a frozen vision of architecture divorced from historical context. This led to the conceptual fracturing of buildings to generate a set of forms.¹⁸¹

Elements of the formalist paradigm established by Strzygowski still continue today. Erdmann published a study of the 7th/13th century caravanserais of Anatolia in 1961, whilst the surviving madrasa corpus was examined by Kuran in 1969. In 1996 Önköl published *Anadolu Selçuklu Türbeleri*, which gives a complete catalogue of the surviving tombs of the Rūm Saljūq period within the borders of Turkey. There have also been formalist typological studies of individual architectural elements, including *mihrābs* in *Anadolu Mihrablari* by Bakırer in 1976. In the same year Meinecke examined the use of a single medium, glazed tilework, in *Fayencedekorationen seldschukischer Sakralbauten in Kleinasien*. The understanding of tilework of the period has recently been increased by the publication of the edited volume *Tiles: Treasures of Anatolian Soil: Tiles of the Seljuk and Beylik Periods* by Arık and Arık in 2008. There have been several studies of the architecture of individual towns, such as *Les monuments Islamiques anciens de la ville d'Erzurum et de sa région*, published by Ünal in 1968. In addition, several volumes and numerous articles have

¹⁷⁸ *Ibid.*, p.74.

¹⁷⁹ *Ibid.*, p.76.

¹⁸⁰ The illustrations are particularly useful when attempting to establish the extent of the restorations and modifications that have been made in the intervening decades.

¹⁸¹ *Ibid.*, pp.67-68.

been published which deal with individual structures. Sarre published *Der Kiosk von Konia* in 1936, and Çetintaş' *Sivas Darüşşifası 614-1217* of 1953 remains the only significant monograph that covers the tomb and hospital of 'Izz al-Dīn. Subsequently, a number of smaller structures have received more detailed attention, an example being the short volume that discusses the Külük mosque in Kayseri, written by Yurdakul in 1996. Over the last few decades a number of more general studies have been published, including *Turkish Art and Architecture* by Aslanapa in 1971 and a similar work by Akurgal in 1980.¹⁸² There has been an increase in the number of studies with a more technical focus,¹⁸³ due in part to the role played by technical universities, especially METU,¹⁸⁴ in the study of architectural history in Turkey. More recently the works of scholars such as Pancaroğlu, Yalman, Redford and Leiser have introduced a much wider historical context to the study of the architecture of the period, moving away from the approach of so many of the earlier works.¹⁸⁵ The importance of eradicating the limits imposed by 20th century political boundaries should not be underestimated. These arbitrary divisions have been anachronistically projected onto the past in some of the formalist studies of the architecture of the region. This has led to the inclusion of Syrian structures which happen to be located within the modern borders of the Republic of Turkey, yet the exclusion of the much more closely related Ildegüzid and Aḥmadīlī architecture of Nakhchivān and Marāgha.¹⁸⁶

Such an isolationist and nationalist approach to the study of Anatolian architecture is in direct contrast to the methods suggested for the study of Islam in Anatolia by Köprülü in 1922. He stated that for a full understanding of the subject, the study of such regions as Syria, Iraq, Azerbaijan and Khurāsān must be included.¹⁸⁷ Given how closely intertwined religious beliefs, the broader society and its material culture

¹⁸² The full details of all these titles, along with many other relevant books and journal articles can be found in the bibliography.

¹⁸³ One of many examples is the study of the chemical properties of early 7th/13th century mortars and bricks by Tuncoku, Caner-Saltik and Boke, published in 1993.

¹⁸⁴ Orta Doğu Teknik Üniversitesi / Middle East Technical University, Ankara.

¹⁸⁵ See the bibliography for full details of all these works.

¹⁸⁶ Pancaroğlu (2007), p.76 states that Strzygowski's approach has led to an increasingly introverted and constricted representation of medieval architecture that confined itself to the modern borders of Turkey.

¹⁸⁷ Köprülü (1993), p.4. The work is a translation by Leiser of a long article originally published in Ottoman Turkish in 1922.

were, it does not make sense to exclude relevant information from the research process because of the vagaries of nation state borders established in the 20th century. As a result this thesis refers to a number of relevant antecedent structures from across the wider Islamic world. Examples include the surviving Ildegüzid structures, which are clearly related to the form and decoration of brick and glazed tile structures such as the Mengücek Gazi tomb in Kemah (c.587/1191), the Sivas Great Mosque minaret (609/1212-3) and the Kırk Kızlar tomb in Niksar (c.617/1220). It is these connections, alongside those of other Anatolian structures, to the architecture of Aleppo, Iran and Central Asia which are investigated in the following chapters. What follows is an attempt to understand the grand narrative of the development of Islamic architecture across Anatolia in its widest possible sense.

CHAPTER II

**Towards a new Aesthetic:
Portals, Tombs and Minarets**

INTRODUCTION

The aim of this chapter is to demonstrate the physical manifestation of the formation of what became a unique imperial identity in the Rūm Saljūq sultanate during the late 6th/12th and early 7th/13th centuries. This aesthetic was based around the use of stone muqarnas hoods, brick minarets and glazed tile decoration. The elucidation of the development process requires reference to a limited number of structures built by other coeval dynasties, including the Dānismendids, Saltuqids and Mengüjekids, when it is relevant. A wider view is required to show the likelihood that the same groups of craftsmen were responsible for the construction of structures for different regional rulers.¹ By defining the corpus and examining the most distinctively Islamic and decorative architectural elements, namely portals, tombs and minarets, it is possible to show the diversity of sources and patterns, as well as the establishment of a new and distinctive architectural aesthetic during the period of study. This formalist approach provides the foundation for the analysis of methods and materials in chapter three. The examination of structures provides the evidentiary base for hypotheses regarding the intentions of the patrons, and the wider imperial aspirations of the dynasty, demonstrating that architecture was their most tangible manifestation.

The portals in the early corpus are, with the exception of the entrances of brick tombs, exclusively in stone. In contrast, the minarets are predominantly brick, with stone being used only for internal stair treads, the foundations and the lower part of the base. Tombs are built of both materials, being either exclusively brick or stone,² or a combination of the two. As a general rule the stone structures feature carving but no external glazed intarsia, whereas the brick buildings tend to have glazed intarsia but no carved elements. This is in contrast to the use of carved stucco in the Great Saljūq tradition in Iran, and carved terracotta decoration employed on the brick architecture of the Qarakhānids, Ghūrīds and Khwārazmians further to the east.³

¹ Pancaroğlu (2013), pp.39-42 shows that the Saljūq Alay han near Aksaray and the Mengüjekid Sitte Melik tomb in Divriği both bear the signature of *Tūtbeg ibn Bahrām al-Khilāfi*.

² Regardless of the medium of the main body of a tomb, the foundations are always in stone.

³ See Hillenbrand (2000), pp.124-207 for an overview of the surviving Ghūrīd and Khwārazmian architecture.

There was one structural typology in particular that contributed towards both the visual perception, as well as the fiscal reality, of the strength of the sultanate. The network of caravanserais (hans) worked on a functional as much as aesthetic basis, although most of them do feature a decorative muqarnas hood. Caravanserais were just one, albeit the most physically tangible, element of the wider economic policy of the Rūm Saljūq sultanate. They were founded by the sultan and the leading *amīrs*,⁴ with the funding for the ongoing operating costs established by *waqf* levied on the surrounding villages.⁵ The fortress-like buildings provided a degree of physical security as part of the wider policy to increase trade, which included the decision by Ghiyāth al-Dīn to indemnify merchants for losses as a result of robbery.⁶ Alongside the security that the physical structures provided at night, an organisation of guardsmen, the *derbent*, was established to keep the merchant safe while travelling between caravanserais.⁷ By the early 7th/13th century the network of caravanserais had started to be constructed, and they have been described by Önge as one of the symbols of the administrative and economic power of the Saljūq ruling class.⁸ They projected Rūm Saljūq presence, power and authority beyond the urban centres and into the often lawless territory between.⁹ In addition to the Rūm Saljūq caravanserais, the Mqargrdzeli family, Kurdish rulers of Armenia after 1199 CE, built a chain of caravanserais along the Araxes River in eastern Anatolia. Eastmond describes them as almost identical in form and decoration to the Rūm Saljūq ones. He argues that these similarities demonstrate the cultural and economic alliance between the two dynasties.¹⁰ However, it may be the case that they are evidence for the mobility of craftsmen who had experience in the construction of caravanserais for Rūm Saljūq patrons. Eventually a substantial number of caravanserais were built across the

⁴ The Hekim han near Malatya is an exception, as it was founded by a private individual who was not part of the ruling elite.

⁵ For the best discussion regarding patronage and *waqf* in Anatolia see Rogers (1976), pp.69-103.

⁶ Önge (2007), p.52. Ghiyāth al-Dīn also offered tax incentives to attract merchants away from Lusignan Cyprus.

⁷ *Ibid.*, p.52.

⁸ *Ibid.*, p.53.

⁹ Pancaroğlu (2013), p.55 describes the construction of hans as a political act.

¹⁰ Eastmond (2004), p.93. He suggests that the aim of the building programme was to encourage trade in their capital at Ani. The Mqargrdzeli family ruled Armenia in the first half of the 7th/13th century.

sultanate.¹¹ The process began under Kılıç Arslān II, and continued throughout the 7th/13th century. Architecture in general, and the caravanserais in particular, formed the physical part of a wider trading network which helped to define the sultanate as well as sustained it financially. Eastmond concludes that the caravan routes across Anatolia encouraged the transmission of art and ideas as well as goods.¹²

¹¹ Hillenbrand (1994), p.346 suggests that the corpus of 7th/13th century caravanserais consists of a hundred structures. For the best account of the Anatolian caravanserais see Erdmann (1961). Yavuz (1997), pp.80-95 has a more recent overview, but focuses primarily on structures built after the scope of this thesis.

¹² Eastmond (2004), p.93.

PORTALS

There is a far greater trend towards uniformity and a distinctively Anatolian style in the portals than there is in the minarets of the late 6th/12th and early 7th/13th centuries. One of the aims of this section is to refute the argument that there was not a distinctive Rūm Saljūq style of portal by the end of the first quarter of the 7th/13th century.¹³ This is achieved by demonstrating the overall unity of the style which had emerged by the time of the death of sultan ‘Izz al-Dīn Kay Kāwūs I. The surviving stone portals, with the exception of the two earliest examples, feature muqarnas hoods with flanking side niches.¹⁴ This basic form emerged in the last quarter of the 6th/12th century¹⁵ and was rapidly employed in numerous guises on madrasas, tombs, hospitals and mosques. The portals built in what had become the lands of the Rūm Saljūqs by 617/1220 are primarily lithic structures with muqarnas hoods but, as is to be expected in a period of synthesis and innovation, numerous unique aspects are to be found. The portals are the primary means of decoration employed on the otherwise austere façades of the subject buildings, regardless of their functional typology. By examining the limited corpus of surviving portals up to the point where all the basic elements of form and style had been synthesised, as can be seen on the portal of the ‘Izz al-Dīn hospital in Sivas (614/1217-18),¹⁶ it is possible to demonstrate both the hierarchical nature of architectural patronage and the linear chronological aspect of their development.

Corpus Overview

In order to get a sense of the corpus, a brief overview of each portal is given below, prior to the comparative analysis of the various individual components that forms the majority of this section. Such close analysis of the details is needed in order to reveal the patterns, themes and processes of development that occurred during the short

¹³ Crowe (1975), p.31 argues that there was no distinctive style prior to the construction of the Mengüjekid mosque and hospital complex in Divriği in c.625/1228. *Ibid.*, p.35 goes on to state that no set rules or patterns had been codified.

¹⁴ The Sitte Melik tomb in Divriği, being the third of the surviving portals, has a two sided V-shaped recess that appears to be the first and last of its type, but sets the precedent for the later three and four sided niches.

¹⁵ See Pancaroğlu (2013), pp.25-67 for a study of the two earliest muqarnas hood portals, the Alay han near Aksaray and the Sitte Melik tomb in Divriği.

¹⁶ See chapter four, pp.285-300.

period in which the elements of a new style were synthesised. It is a small corpus of eleven portals, two of which consist of a facet of an octagonal tomb, while the rest provide access to a variety of structural types: a *ribāʿī*, a tomb enclosure, a madrasa, a hospital, two caravanserais and three small mosques. These structures are spread across the Anatolian plateau and include portals built by craftsmen working for Saltuqid and Mengüjekid, but primarily Rūm Saljūq patrons. All but the earliest portal under discussion have a muqarnas hood as the main distinguishing feature. There are also a few plain portals that only consist of a simple arch, such as at the Hekim han (615/1218) near Malatya, but they do not add a great deal to the understanding of the development of the new aesthetic and do not form part of this discussion.

There are two portals in Konya that are not discussed in the context of the muqarnas hood structures. They represent a unique marble style based on the bichrome stereotomic strapwork decoration developed to the south in the context of Ayyūbid *miḥrāb* architecture. It was a short-lived aesthetic developed under ‘Izz al-Dīn Kay Kāwūs I, probably in an attempt to create a distinctive style for the main imperial capital at Konya, and this phenomenon is addressed at the end of the portals section.

The citadel mosque in Divriği is the earliest surviving portal (fig. 2.1) in the corpus and is securely dated by the upper band of epigraphy to 576/1180-81.¹⁷ The mosque is basilical in form, being rectangular in plan but with the short side facing towards *qibla*. The portal is a hybrid style that reflects the eclectic nature of the early phase of Islamic architecture in Anatolia. The mosque was built for the Mengüjekid ruler Sayf al-Dīn Shāhanshāh (r. c.570-593/c.1175-97)¹⁸ and the lintel features the signature of the craftsman in Kufic, Ḥasan (?) ibn Pīrūz (?) al-Marāghī.¹⁹

The square stone panels with geometric patterns in the tympanum above the door are similar in appearance to the two surviving tombs in Nakhchivān but are executed in

¹⁷ Sauvaget and Wiet (1937), Vol. 8, p.111.

¹⁸ Bosworth (1996), p.217.

¹⁹ Pancaroğlu (2013), p.32. The Kufic inscription as it appears on the building, which begins with ‘the builder is the master’ includes an extra letter, a *lām* instead of an *alif* at the beginning of *ustādh* and a number of non-standard breaks between letters, resulting in isolated medial forms, appearing to read: العمل استاذ حسن بن بيررز المرغ

stone rather than brick. The surrounding arch and spandrels are constructed with stones cut to look like bricks. In addition the spandrels feature glazed inserts.²⁰ The geometric patterns are much shallower than those on the rest of the corpus and are the only examples to have a flat rather than curved or V-incised surface. The portal is also the only one that does not access a tomb yet has a lintel instead of a shallow arch over the door.

The mix of patterns and even methods developed in the brick building tradition of Islamic Iran with materials and techniques employed in the indigenous stone tradition of Anatolia marks this portal in particular. It represents the intersection point of the two traditions of east and west, indigenous and imported. As the cross-section shows (fig. 2.2), there are a number of features, such as the facet at 45 degrees, the engaged columns and the use of intaglio rather than relief patterns that make it an important structure in the development of a unique Anatolian aesthetic. It is with this portal that the architect laid the groundwork for a number of later structures, although it took several decades for the motifs to be widely adopted.

The two earliest muqarnas hood portals to survive, at the Saljūqid Alay han near Aksaray and the Mengüjekid Sitte Melik tomb in Divriği (fig. 2.3),²¹ over 450km apart, both bear the signature of Tūtbeg ibn Bahrām al-Khilāṭī,²² showing both the mobility and the diverse patronage of craftsmen at the time. The Alay han is thought to date from late in the rule of Kılıç Arslān II, probably somewhere around 586/1190 according to Pancaroğlu, while the tomb has a *terminus ante quem* of 593/1196-7, based on the epigraphic band around the top.²³ The Divriği tomb was built for the same patron as the Divriği citadel mosque, Sayf al-Dīn Shāhanshāh (r.570-593/1175-97).²⁴ Unlike all the other portals in the corpus, it does not have a *cavetto* frame,

²⁰ The nearby Kamedreddin tomb (592/1196) at the bottom of the citadel hill is another rare example of stone and glazed elements being combined. In that case there is a band of shallow circular recesses around the top of the wall into which glazed bowls were set, rather than architectural tiles. For a drawing showing the location of the bowls see Meineke (1976), Vol.2, p.113, fig.21.

²¹ See Önköl (1996), pp.37-42 for elevation drawings of the Sitte Melik tomb.

²² Pancaroğlu (2013), pp.39-41.

²³ *Ibid.*, p.39. No specific reason for the attribution to Kılıç Arslān II is given and Öney (1969), p.52 assumes that the Alay Han is of 7th/13th century construction.

²⁴ *Ibid.*, p.35. It is quite possible that the tomb was built during his lifetime, which, coupled with the lack of a firm date for the han, could indicate that the Alay han being earlier is an erroneous assumption.

featuring instead a stepped recess with a patterned edge. Neither of the portals have flanking niches but the Alay han portal has a low relief carving of a pair of affronted lions that share a single forward looking head at the base of the muqarnas hood. This symbol of royal authority is also seen on the portals of the Çifte madrasa in Kayseri and the 'Izz al-Dīn hospital in Sivas.²⁵



Fig. 2.1 – Citadel mosque, Divriği (576/1180-81); portal © R. McClary



Fig. 2.2 – Citadel mosque, Divriği; portal cross-section @ 130cm above top step
© R. McClary

²⁵ Öney (1969), p.52 gives the size of the lions at the Alay han as 0.45m x 0.23m. For a general discussion of stone lions see chapter three, pp.157-159, and for details of the Sivas lions see chapter four, pp.296-298.

The portal in Tercan (fig. 2.5) has a number of unique features, the most obvious of which is its curved plan, a result of it being part of the round enclosure wall around the Mama Khātūn tomb, a structure discussed in the tomb section below. The testatrix, Mama Khātūn, was the sister of the Saltuqid *malik* Nāṣir al-Dīn Muḥammad. She was *malika* of Erzurum between 587/1191 and 597/1200-01, during which time she was allied with the Ayyūbid ruler of Mayyāfārikīn (Silvan) against the Shāh-i Arman.²⁶ On one side of the main framed composition of the portal is a V-shaped recess similar to the ones on the facet east of the entrance facet of the earlier Sitte Melik tomb in Divriği (fig. 2.4). Pancaroğlu²⁷ has noted the use of this motif on earlier Armenian and Georgian church architecture. Given the overwhelmingly Armenian population of nearby Erzincan²⁸ it is perhaps not surprising to see such a motif mixed with the entirely Islamic motifs that were also employed. The church of Varzahan near Bayburt, destroyed in the early to mid-20th century, had similar V-shaped recesses on each side of the door.²⁹ The seven metre high³⁰ portal in Tercan is a syncretic structure that employs patterns developed in the brick architectural tradition of Iran executed in stone. Like several portals of the period, it is signed by the craftsman. The signature is split over two panels of cursive epigraphy above the flanking niches and gives the name as Abū'l-Namā ibn Mufaḍḍal al-Aḥwal al-Khilāfī.³¹ Although the name is different, he has the same *nisba* as the craftsman who built the Alay han and the Sitte Melik tomb, indicating a tradition of craftsmen trained in the art of executing muqarnas hoods in stone and synthesising Islamic and Armenian Christian motifs in Ahlat on the north shore of Lake Van (fig. 1.1).³² The

²⁶ Leiser (1995), p.1001. Leiser adds that there is sparse and confused information on the Saltuqids but it is known that Mama Khātūn asked the Ayyūbid sultan al-Malik al-ʿĀdil to find her a husband. This potential increase in Ayyūbid influence in eastern Anatolia may have been one of the reasons that the Rūm Saljūq sultan Rukn al-Dīn Sulaymān II annexed the Saltuqid territory in 598/1202.

²⁷ Pancaroğlu (2013), p.35.

²⁸ In his geography, the *Muʿjam al-buldān* (c.1224-8), Yāqūt al-Ḥamawī described the majority of the population of Erzincan as Armenian. He also noted that there were Muslims, who formed the elite of the city. Cited in Goshgarian (2013), pp.239-240.

²⁹ The church was photographed in 1911, see Bachmann (1913), pl. 41 A.

³⁰ Yetkin (1962), p.42.

³¹ Ünal (1968), p.142.

³² Ahlat traditionally had a large Armenian population, with their long lithic tradition of church architecture. The city is also close to Nakhchivān and north-west Iran, which had a tradition of brick-built Islamic architecture. See Pancaroğlu (2013), pp.25-67 for a good overview of the argument for the introduction of stone muqarnas to Anatolia via the craftsmen of Ahlat.

portal, enclosure wall and tomb are thought to date from around 596/1200, with one of the tombs set into the recesses on the inside of the enclosure wall dated to 1203 CE.³³ As well as the curved form, wide array of patterns and epigraphic styles,³⁴ another unusual feature of the portal is the use of freestanding rather than engaged columns to flank the entrance (fig. 2.6).³⁵ This is also seen at the Sitte Melik tomb in Divriği, but in that case the columns are rounded at the front and pointed at the back (fig. 2.4).



Fig. 2.3 – Sitte Melik tomb, Divriği (592/1196-7) © R. McClary

³³ Yetkin (1962), p.42. Rogers (1975), p.16 dates the structure to c.1220 CE, a date based in part on the similarity of the epigraphic star patterns to the brick ones on the end wall of the axial iwan of the madrasa at Zawzan in Khurāsān built in 616/1219-20. Given the presence of similar stars on the interior of the Mu'mina Khātūn tomb in Nakhchivān of 582/1186-7, as well as the presence of a tomb dated 1203 CE within the enclosure, the later date given by Rogers may be dismissed.

³⁴ For a detailed description and drawings of the plan and decoration of the Mama Khātūn portal see Ünal (1968), pp.129-142.

³⁵ Another example is the freestanding octagonal column (the other is missing) at the citadel mosque, also in Divriği.

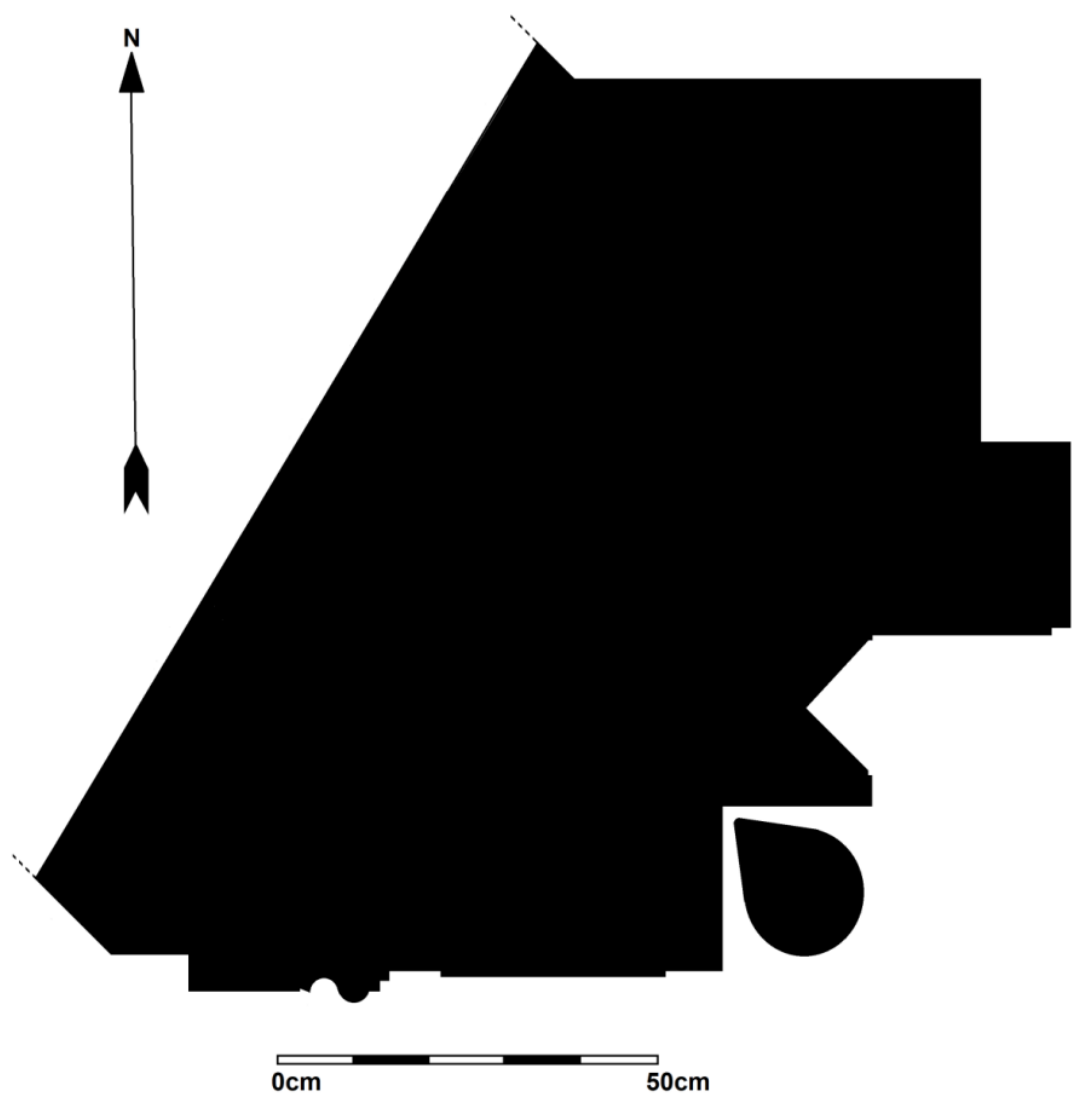


Fig. 2.4 – Sitte Melik tomb, Divriği; portal cross-section @ 180cm above grade © R. McClary



Fig. 2.5 – Mama Khātūn tomb enclosure portal, Tercan (c.596/1200) © R. McClary



Fig. 2.6 – Mama Khātūn tomb enclosure portal, Tercan; cross-section @ 160cm above platform © R. McClary

The Çifte (paired) madrasa in Kayseri consists, as the name implies, of two structures.³⁶ To the east is a hospital accessed through a plain portal, with a tomb located inside, while the west half is a madrasa with a decorated muqarnas hood portal. The marble epigraphic panel over the west portal gives the names of sultan Ghiyāth al-Dīn Kay Khusraw and Gevher Nesībe, the daughter of Kılıç Arslān II, along with the date, 602/1205-6. It is the first dated example to conform to the basic canon of marble epigraphic panel, muqarnas hood, flanking niches, geometric and *cavetto* frame that projects from, and is higher than, the façade. It is built of the local black volcanic stone and, as with most of the other royal Rūm Saljūq portals in the corpus,³⁷ there are fragmentary remains of a lion sculpture, in this case above the epigraphic panel (fig. 2.7).³⁸ The portal has been extensively repaired in the 20th century but a photograph taken by Gertrude Bell in 1909, prior to any major restoration, shows that the major elements are original and that the restored elements closely match the original work.³⁹

The Külük mosque portal in Kayseri was added to the north-east corner of a pre-existing 6th/12th c. Dānismendid structure in 607/1211 and is unique in that it is set at 45 degrees to the two adjacent walls on a bevelled corner and because it is the only surviving example of a portal added to an existing structure (fig. 2.9).⁴⁰ Its bevelled nature makes for an unusual yet effective approach to the interior of the mosque. The white marble epigraphic panel contrasts well with the black volcanic stone of which the portal is constructed.⁴¹ The addition of the portal, like the brick minaret added to the nearby Great Mosque, introduced a distinctly Saljūq aesthetic to a formerly Dānismendid structure and supports the case for a political reading of some elements of the portal. It has several unique features, including bosses on each side

³⁶ See fig. 4.3 for a ground plan of the whole structure.

³⁷ The Evdir han portal has suffered losses to the upper section and may well have originally featured a lion sculpture as well.

³⁸ Öney (1969), p.50 gives the original size of the lion as being 0.4m x 0.2m.

³⁹ The photograph, image O_155, is at the Newcastle University Library and available online at: <http://www.gerty.ncl.ac.uk/photos.php>

⁴⁰ The marble portal of the citadel mosque in Konya was inserted into a pre-existing Byzantine wall, but it is of a different typology and the wall was not part of a relatively recently built mosque as is the case with the Külük mosque.

⁴¹ Yurdakul (1996), p.22. The panel mentions sultan ‘Izz al-Dīn Kay Kāwūs I, names the female patron who added the portal as Elti Ma’mūn bint Maḥmūd ibn Yağıbasan and gives the year 607/1211.

of the epigraphic panel that have the appearance of turbans, a row of muqarnas projecting from the springing stones for the arch over the door and a row of merlons along the top of the portal.



Fig. 2.7 – Çifte madrasa, Kayseri (602/1205-6); west portal © R. McClary



Fig 2.8 – Çifte madrasa, Kayseri; west portal cross-section @ 60cm above base
© R. McClary



Fig. 2.9 – Külük mosque, Kayseri (607/1210-11); portal © R. McClary

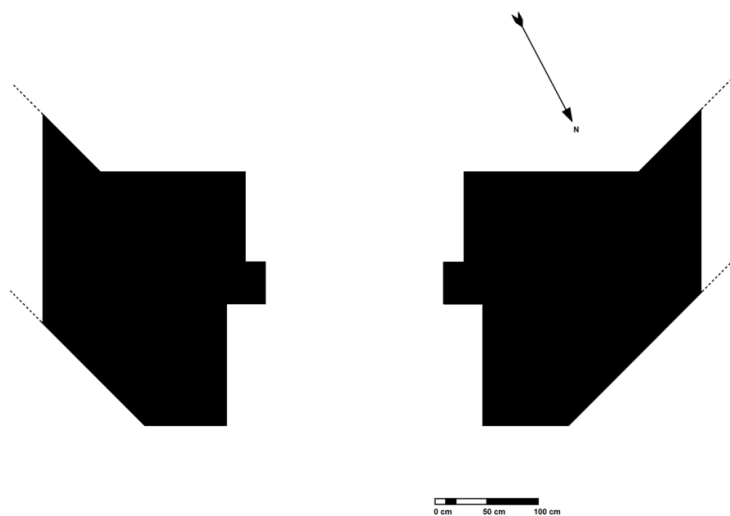


Fig. 2.10 – Külük mosque, Kayseri; ground plan of the portal © R. McClary

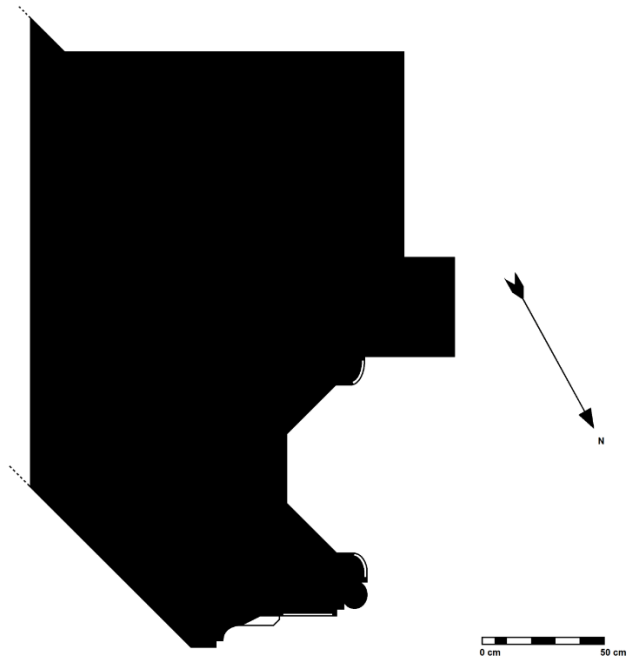


Fig. 2.11 – Küçük mosque, Kayseri; portal cross-section © R. McClary



Fig. 2.12 – Halifet Gazi tomb, Amasya (c.606/1209-10); portal © R. McClary

The Halifet Gazi tomb in Amasya is octagonal in plan and is attached on the west side to a madrasa dated to 606/1209-10, of which little remains.⁴² It has a shallow muqarnas portal (fig. 2.12) in the south facet that is close, stylistically, to the Taş mosque in Konya, but it has a similar frame style and lacks flanking niches, as does the Sitte Melik tomb in Divriği.



Fig. 2.13 – Taş mosque, Konya (612/1215) © R. McClary



0 cm 50 cm

Fig. 2.14 – Taş mosque, Konya; exterior cross-section @ 125cm above current grade
© R. McClary

⁴² Önköl (1996), p.63 Gives the date of the madrasa and suggests that the tomb is likely to have been built at around the same time.

The Eshab-i Khef *ribāt*, near Afşin (fig. 1.1) was built at a dynastic patronised cult site dedicated to the *Aşhāb al-Kahf* (Seven Sleepers),⁴³ and has a portal that is richly decorated, albeit in a rather crude manner. The irregular colours of the stone obscure much of the detail (fig. 2.15) and gives it an appearance of being a little less than the sum of its parts.⁴⁴ The large epigraphic panel above the hood mentions ‘Izz al-Dīn Kay Kāwūs I, names the patron as Abū ‘Alī al-Ḥasan ibn Ibrāhīm al-Sultānī and gives the date of Ramaḍān 612/January 1216. The upper, brick part of the structure is later, meaning that the portal was originally taller than the rest of the façade.

The small Taş (stone) mosque in Konya was built in 612/1215 for Ḥājjī Ferruh, ‘Izz al-Dīn’s vizir and chief treasurer, by Ramaḍān ibn Kūnis al-Qayṣarī.⁴⁵ Unlike most of the other portals, it does not project, but is integrated into the rest of the façade (figs. 2.13 and 2.14). It is the smallest non-tomb portal as well as the only one with niches that do not have multi-tier muqarnas hoods. It has a rather poorly executed main muqarnas hood, and a change in the framing pattern above the door arch indicates a change of craftsmen at some point during the construction process.

⁴³ Peacock (2013)b, p.203. *Ibid.*, notes that it is located in the Türkmen heartland.

⁴⁴ The variegated appearance of the muqarnas hood is due, in part, to later restorations.

⁴⁵ Sönmez (1995), p.200. The mosque also has an inner portal which is not discussed here as it was not accessible when visited. For a plan showing the inner and outer portals see *ibid.*, p.201.

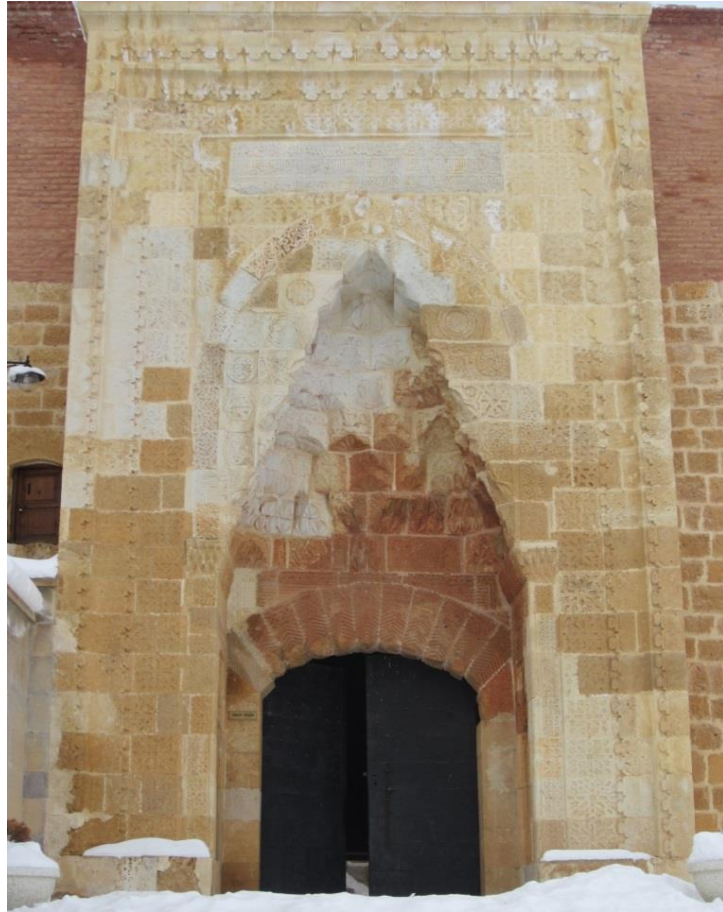


Fig. 2.15 – Eshab-i Kehf *ribāṭ*, Afşin (612/1216); portal © R. McClary



Fig. 2.16 – Eshab-i Kehf *ribāṭ*, Afşin; portal cross-section @ 136cm above current grade
© R. McClary

The large four-iwan plan⁴⁶ Evdir han (612/1215-19) is in Yeşilbayır on the road to Konya, 18km north-west of Antalya (fig. 1.1), a city which had been recaptured by ‘Izz al-Dīn in 612/1216. It is roughly contemporary with, but perhaps a little earlier than, the hospital founded by ‘Izz al-Dīn Kay Kāwūs I in Sivas.⁴⁷ At the time of construction it was the largest caravanserai in Anatolia and may be viewed as a sultanic victory monument. It reinforced the Rūm Saljūq dominion over the approach to the city and thus acted as both a functional structure and visually identifiable symbol of the increasingly powerful sultanate. The Evdir han combined trade security, hospitality and state stability through both its form and function.

The portal is similar the one at the Sivas hospital, if a little smaller in scale and with the same arrangement of the basic architectonic forms. It is much plainer and lacks the epigraphy, sculpture and level of curvilinear and rectilinear patterns seen in Sivas. Unlike so many of the surviving structures of the late 6th/12th and early 7th/13th centuries, the entire structure is unrestored, allowing a clear understanding of what is original. It is built entirely in stone, with dressed ashlar arches, exterior walls, and portal, with the rest of the structure being rubble (fig. 2.17). The portal is monumental in scale but with fairly simple decoration.

The final, and largest, of the portals in the corpus is the one at the hospital of ‘Izz al-Dīn Kay Kāwūs I in Sivas (614/1217-18), (figs. 2.22 J, 2.24, 2.29 F, 2.31 H and 2.43). Elements of the structure are discussed in relation to the rest of the corpus, but the main analysis is at the beginning of chapter four.

⁴⁶ See Eliséeff (1978), p.1012 for a plan of Evdir han.

⁴⁷ Sauvaget and Wiet (1939), p.166 gives a translation of an inscription panel, that is now lost, with the name of ‘Izz al-Dīn and a partial date of 612 AH. The lack of any other patron's name would indicate that it was a Sultan han. Erdmann and Erdmann (1976), p.121 gives the date as 1215-19.



Fig. 2.17 – Evdir han, Yeşilbayır (c.617/1214-19); portal © R. McClary

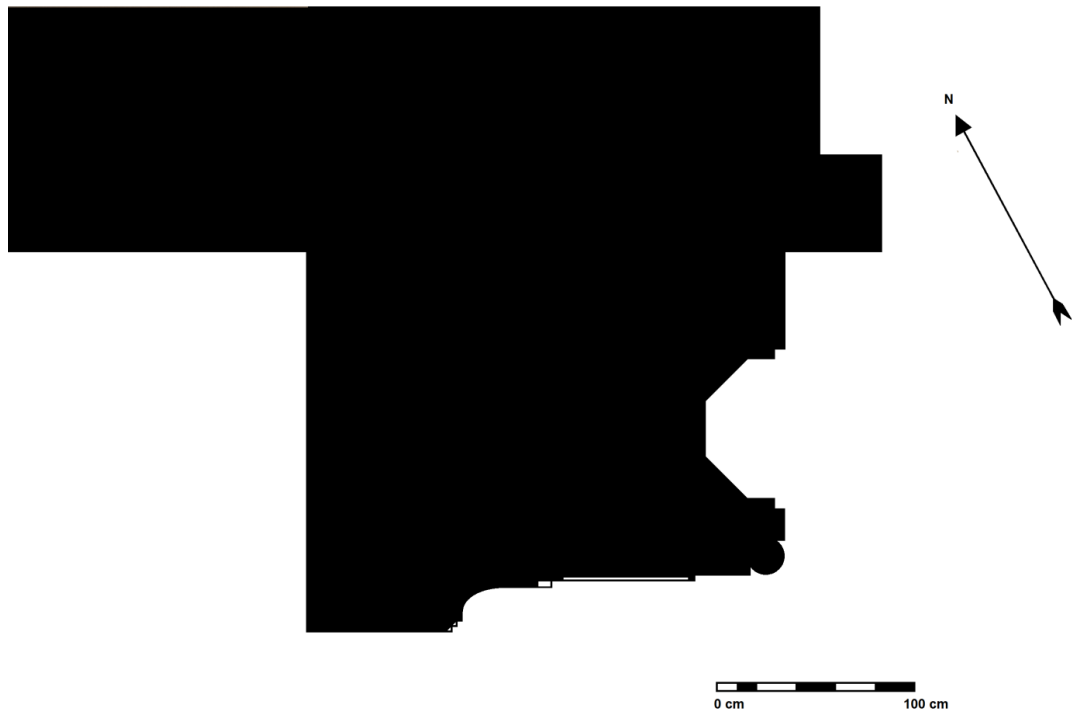


Fig. 2.18 – Evdir han, Yeşilbayır; portal cross-section @ 126cm above current grade © R. McClary

ANALYSIS AND COMPARISON OF PORTAL ELEMENTS

Muqarnas hoods

The muqarnas hood is the most visually striking and technically challenging aspect of the portals in Anatolia and is a motif that came to be associated primarily with the Rūm Saljūq architectural aesthetic. There is evidence for the same craftsman working for both Rūm Saljūq and Mengüjekid royal patrons in the last decade of the 6th/12th century,⁴⁸ but by the early 7th/13th century such an approach was less common. The decision by the Mengüjekid ruler not to use muqarnas hoods for the primary portals or the *mihrāb* of the monumental mosque and hospital complex in Divriği, completed in 626/1228-9,⁴⁹ suggests that it was increasingly recognised as a more specifically Rūm Saljūq, rather than a generally Turko-Muslim motif in Anatolia. Through the course of the 7th/13th century the form can be seen to have proliferated across the expansive Rūm Saljūq sultanate.

Muqarnas hoods, like the portals they form a part of, were not reserved for any one type of building. The earliest surviving muqarnas hood portal, in stucco, is at the *bīmāristān* al-Nūrī in Damascus (549/1154)⁵⁰ with the earliest stone example being the portal attached to the *mashhad* al-Dikka in Aleppo (585/1189).⁵¹ In both cases the cells of the type developed in Iran, namely the lancet shape with the tip bent forward. The earliest extant examples in Anatolia are on a caravanserai, the Alay han near Aksaray (586/1190), and a tomb, the Sitte Melik tomb in Divriği (592/1196-7). From the start a clear programme of constituent elements was established. All the surviving portals with muqarnas hoods feature a ribbed crowning cell, albeit of varying sizes and scale relative to the rest of the portal (fig. 2.22). All the hoods are also surrounded by a patterned framing arch, with the examples in Tercan and Amasya being the only ones with epigraphy in the arch (figs. 2.22 C and 2.22 H). The Amasya and Kayseri Külük mosque hoods have the sharpest points at the tip of

⁴⁸ Pancaroğlu (2013), p.41.

⁴⁹ Kuban (2001), p.42 cites the date as from an epigraphic inscription and suggests, judging by the scale and the complexity of the carving, that the complex was probably started in the early 1220's CE while Rogers (1972), p.91 suggests that 626/1228-9 is the foundation rather than completion date. Kuban (2001), p.148 notes that the only use of a muqarnas hood is over the later east window, which was not part of the original design, and was executed by a different craftsman.

⁵⁰ Tabbaa (2001), p.119. See *ibid.*, fig.58.

⁵¹ *Ibid.*, p.152 and p.153, fig.79.

their framing arches. Amasya has the shallowest of the hoods, followed by the Sitte Melik in Divriği. This is a result of their reduced scale and projection, due to their being set into a facet of an octagonal tomb, rather than the more monumental portals of the rest of the corpus. The Halifet Gazi tomb portal in Amasya has a flat back and only features cells on the side until the top two crowning rows. As fig. 2.22 and table 2.1 show, the majority of the hoods have seven rows of cells and they are generally wider than they are high, with the exception of the first two, signed by Tütbeg ibn Bahrām al-Khilāfī.

Regarding the overall form of the muqarnas hood, the Taş mosque in Konya and the Evdir han have the most angular appearance. The Taş mosque portal has a rather forced attenuation of the upper section (fig. 2.22 G) in order to achieve the desired height, and is the least successful composition in the corpus. The earliest dated stone muqarnas hood in Anatolia is a single stone with the cells carved into it, forming the upper section of the *mihrāb* of the citadel mosque in Divriği (576/1180-81). What differentiates the later hood is the method of construction, as a single block was not a practical option. The individual stone blocks that make up the broader composition are examples of complex stereotomy that comprises multiple muqarnas cells in each block. They lock together to give the entire hood a rigidity that has resulted in a high degree of structural survival even when surface detail has eroded. It is not just the outer face that is faceted, with the entire block having facets so that they each lock together.⁵² Even when the building has evidence of movement, as seen at the Evdir han, they remain in place (fig. 2.20). The complex appearance of the hoods can be understood better when the underlying design schema is drawn out (fig. 2.21)⁵³ and the individual elements are revealed by movements in the structure.

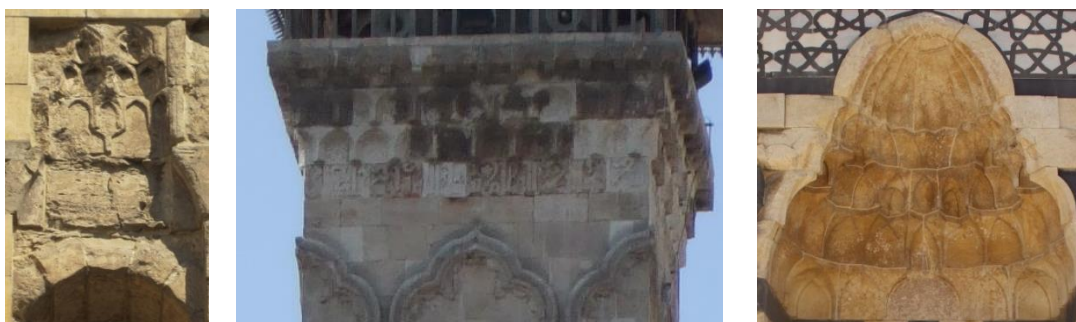
The earliest dated stone muqarnas in Syria and Egypt date from the late 6th/11th century onwards. The earliest is the small hood over a window on the inside of the Fāṭimid Bāb al-Futūḥ in Cairo (c.479/1087)⁵⁴ (fig. 2.19 A), closely followed by the

⁵² See Écochard (1937-38), p.108, fig.6 for an exploded diagram of the constituent blocks of the coeval muqarnas portal at Qal'at Ṣahyūn in Syria.

⁵³ The drawing in fig.2.21 depicts the basic underlying plan. See Erdmann and Erdmann (1976), figs. 2-5 for a full set of drawings of the muqarnas hood and decoration of the Evdir han.

⁵⁴ Bloom (2007), p.125.

two bands of muqarnas around the top of the (recently destroyed) Saljūq minaret of the Great Mosque in Aleppo (487/1094)⁵⁵ (fig. 2.19 B). Presumed to date from the late 6th/12th to early 7th/13th century based on nearby epigraphy,⁵⁶ the portal of the palace in the citadel at Aleppo (fig. 2.19 C) has a central ribbed crowning cell, larger than the ones seen in Anatolia, above four rows of cells.⁵⁷ In all three cases, the stone muqarnas cells are roughly quarter-hemispheres in the Iranian manner, and like the brick muqarnas in Anatolia.⁵⁸ In contrast, the Anatolian muqarnas hood portals and niches almost always use a different form of cell, more akin to a half-cone shaped void, probably developed around Ahlat, if the *nisba* of the earliest signed examples is any guide, and the numerous gravestones in the city which feature muqarnas bands of a similar nature.⁵⁹



A: Bāb al-Futūh, Cairo B: Great Mosque minaret, Aleppo C: Citadel Palace, Aleppo
Fig. 2.19 – Stone muqarnas in Cairo and Aleppo © R. McClary

There was a rapid and almost universal adoption of this basic muqarnas cell design for stone in Anatolia. The same forms were carved on the constituent blocks of almost all the hoods from the very start of the use of the technique in the latter part of the 6th/12th century. They consist of either concave or convex forms with two triangular facets, each of which has either two or three vertical grooves in the form of semi-cones, with the points meeting at the bottom middle and the wide sections forming a fan shape around the edge (fig. 2.20). This style is in contrast to the

⁵⁵ Allen (1986), p.24. A similar motif is used on the minaret at Ma'arrat al-Nu'mān (c.565/1170).

⁵⁶ Tabbaa (1997), pp.80-81. See *ibid.*, for numerous other examples of surviving Ayyūbid portals with similar muqarnas hoods in Aleppo and Damascus.

⁵⁷ In addition, the *bīmāristān* of Nūr al-Dīn in Damascus (549/1154) has a muqarnas hood portal. It consists of ten tiers, the constituent cells of which are stucco versions of the form developed in Iran, unlike most of the stone muqarnas cells in Anatolia.

⁵⁸ See chapter three, pp.173-189 for a discussion of the Iranian type of muqarnas cell.

⁵⁹ See fig. 2.20 and the section addressing stone in chapter three, pp.156-165.

rectangular panel with an upper triangle section folded forward form used in the Iranian style brick muqarnas cells (fig. 3.10) and translated into stone in the Syrian and Egyptian examples. When a flat section is needed the default form is to have a shallow recessed panel delineated by a narrow-centred shouldered arch.

The monumental scale and proficient execution of the earliest extant example of the muqarnas hood, at the Alay han, makes it difficult to believe that it was not part of a longer process of development. Unfortunately there is no surviving evidence in Ahlat or elsewhere. The high level of seismic activity on the Anatolian plateau is the most likely major cause of such lacunae.⁶⁰ Some craftsmen were clearly more skilled at the design and execution of the new technique than others, as it is not a purely lineal development process. This is demonstrated by the rather crude nature of the Taş mosque façade in Konya, when compared with earlier portals.

The innovative and technically challenging new technique of stereotomic muqarnas on a grand scale was adopted as a symbol of the forward looking and increasingly powerful Rûm Saljûq sultanate. Through the course of the 7th/13th century there was a trend towards greater scale, levels of decoration and numbers of tiers. Muqarnas hoods, increasingly executed in marble, became the defining hallmark of Anatolian portals through the 7th/13th and on into the 8th/14th century.

Portal	Date	Location	# of rows	# of 2 row cells	Ratio (w:h)
Alay han	c.586/1190	Nr. Aksaray	7	3 and 2	1 : 0.85
Sitti Melik tomb	592/1196-7	Divriği	4		1 : 0.95
Mama Khâtûn tomb	c.596/1200	Tercan	6		1 : 1.25
Çifte madrasa	602/1205-6	Kayseri	7		1 : 0.94
Külük mosque	607/1210-11	Kayseri	7	3	1 : 0.9
Taş mosque	612/1215	Konya	7		1 : 1.2
Eshab-i Kehf <i>ribât</i>	612/1216	Afşin	7	2	1 : 1
Halifet Gazi tomb	c.606/1209-10	Amasya	5		1 : 1
Evdir han	61?/1214-19	nr Antalya	7		1 : 0.75
‘Izz al-Dīn hospital	614/1217-8	Sivas	9	3	1 : 0.8
Büyük Karatay madrasa	c.617/1220	Konya	7		1 : 0.6

Table 2.1 – Muqarnas hood portal corpus and properties⁶¹

⁶⁰ Bayrak, Çınat and Bayrak (2011), p.269-270 notes that the North Anatolian Fault Zone is one of the most seismoactive faults in the world as a result of the motion of the westward moving Anatolian block. This is due mainly to the collision of the Arabian and African plates against the Eurasian, Anatolian and Black Sea plates. Since at least 2000 BC there has been a long history of devastating earthquakes in the region.

⁶¹ The Cairene examples are not included as they are not muqarnas hoods. The Aleppo citadel hood is not included because of the lack of accurate data.



Fig. 2.20 – Emdir han (c.617/1214-19); portal muqarnas hood © R. McClary

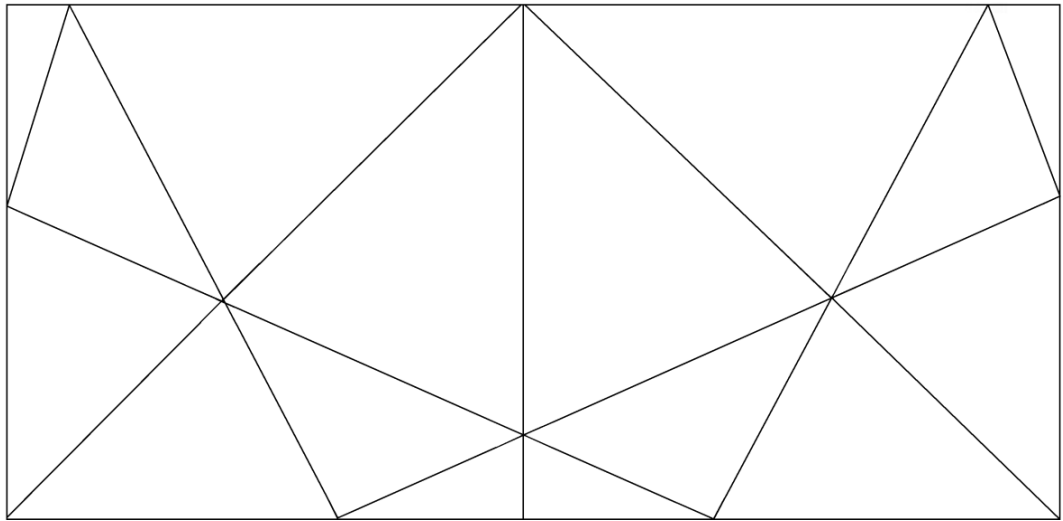


Fig. 2.21 – Emdir han; muqarnas hood underlying grid © R. McClary



A – Alay han, Aksaray



B – Sitte Melik, Divriği



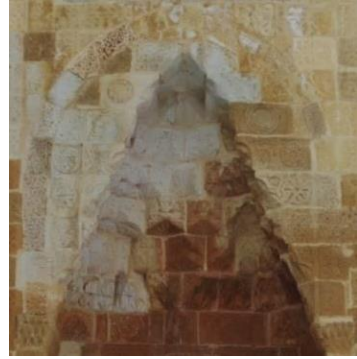
C - Mama Khātūn, Tercan



D – Çifte madrasa, Kayseri



E - Külük mosque, Kayseri



F - Eshab-i Khef, Afşin



G - Taş mosque, Konya



H - Halifet Gazi, Amasya



I - Evdir han, Yeşilbayır



J - 'Izz al-Dīn hospital, Sivas



K – Karatay madrasa, Konya

Fig. 2.22 – Comparison of muqarnas hoods © R. McClary

Roundels

Many of the early portals feature roundels as part of their vocabulary of ornament. There are two main groups of roundels, those that look like a rosette, and more commonly, the ones that consist of geometric strapwork patterns (fig. 2.25). The exceptions are the *ajouré* hemispherical bosses at the Külük mosque in Kayseri and the Büyük Karatay madrasa in Konya (figs. 2.28 B and C) as well as the epigraphic star roundels on the portal of the Mama Khātūn tomb in Tercan (fig. 2.23).

Patterns related to a number of the Anatolian roundels can be seen on the terracotta roundels that are placed in a band around the lower portion of the Ghūrid minaret at Jam in Afghanistan, built in 570/1174-5.⁶² Given the evidence for other aspects of Ghūrid decoration that entered the Anatolian tradition through the movement of craftsmen,⁶³ this is a plausible, if distant, source. Considering the stone medium and large Armenian population of Anatolia, it is more likely that the long tradition of roundels that existed in the Armenian architectural tradition was a more significant source. Given the syncretic nature of the Islamic architecture of the period, it was probably a combination of multiple factors which led to the use of geometric and floral style roundels on portals. Although seen across Anatolia, they tend to be used more in the east than in the west of Anatolia.

Both epigraphic five-pointed star roundels on the face of the capitals of the columns flanking the entrance of the Mama Khātūn tomb enclosure in Tercan (fig. 2.23) are ostensibly identical, depicting the names of Muḥammad and the *Rāshidūn*.⁶⁴ There are minor differences in the execution of some of the letter forms, particularly in the *wāw* of Abū Bakr and the size of the *fleur de lys* above the *mīm* of ‘Umar. These differences suggest the possibility that the master executed the roundel on the right and someone else carved the one on the left.⁶⁵ Although the Tercan portal is executed in stone, the epigraphy around the muqarnas hood is similar to that employed in eastern Iran executed in terracotta. It is perhaps not surprising that a similar

⁶² Flood (2009), pp.97-98 discusses the debate as to the reading of the date, with opinion varying between the earlier date and 590/1193-4. He argues that the earlier date has been recently shown to be correct.

⁶³ See pp.126-144 for the Sivas Great Mosque minaret, and chapter four, pp.334-8 and 352-60 for details of the, primarily epigraphic, connections to Ghūrid architecture.

⁶⁴ The ‘rightly guided’ first four caliphs; Abū Bakr, ‘Umar, ‘Uthmān and ‘Alī.

⁶⁵ The left roundel is also lacking the *mīm* in ‘Uthmān.

epigraphic star can also be found in the terracotta and glazed architectural decoration of Iran.⁶⁶

An unusual feature of the Çifte madrasa portal in Kayseri is the complexity and intricacy of the roundels (fig. 2.25) in comparison with the rather simple nature of the single geometric frame pattern, the reason for which remains unclear. The portal is the only example that has two large strapwork roundels at the top. In addition, there are numerous⁶⁷ smaller roundels around the muqarnas hood, and it may well have been the case that it was the source for the use of numerous roundels on the Eshab-i Khef *ribāt* portal in Afşin. The extensive losses and repairs to the left side of the Afşin portal mean that only one small and six medium-sized roundels survive (fig. 2.27).

The roundels in the spandrel over the door at the hospital of ‘Izz al-Dīn Kay Kāwūs I in Sivas are somewhat smaller and eight-fold (fig. 2.24) as opposed to the ten-fold roundels at the Çifte madrasa in Kayseri (fig. 2.25) but both pairs are very similar in overall style. The design of the Sivas roundels has been compared by Rogers to a slightly earlier glazed and terracotta roundel in Samarkand,⁶⁸ but, given the other connections between the Sivas and Kayseri structures⁶⁹ the roundels of the Çifte madrasa portal appear to be a more plausible source, as they are the earliest of their type in the Islamic architecture of Anatolia. The impetus for the Kayseri designs may well be the Armenian tradition of using stone carved geometric roundels, seen on one of the nave pillars of the church at Tsitsernavank in Karabagh (c.6th-10th century

⁶⁶ Rogers (1972), ill.110 shows a similar five-pointed star on the end wall of the axial iwan of the madrasa at Zawzan in Khurāsān built in 616/1219-20. The pattern is very similar, the main difference being an *Allāh* in the middle of the Zawzan example rather than the five-fold strapwork at Tercan. Rogers (1975), p.16 uses this connection to date the Tercan portal to c.617/1220. The presence of epigraphic roundels on the interior of the Mu‘mina Khātūn tomb in Nakhchivān, much closer geographically to Tercan, makes the connection between Iran and Anatolia evidence of a complex and wide ranging artistic milieu at the time, rather than specific evidence for dating structures.

⁶⁷ Extensive erosion and significant repairs make it unclear what the exact number was, but each side has at least two outside and between four and six inside the framing arch around the muqarnas hood.

⁶⁸ Rogers (1972), notes to ill.60 refers to a medallion from the mausoleum of Ibrāhīm ibn Ḥasan at Afrāsiyāb, dated to the later 6th/12th to early 7th/13th century.

⁶⁹ See chapter four, pp.279-80 for details of the similarities between the layouts of the two structures.

CE).⁷⁰ The case for an Armenian connection to the Kayseri structure is augmented by the use of V-shaped recesses flanking the otherwise plain eastern portal of the structure, a motif first seen in the Islamic architecture of Anatolia on the facets flanking the Sitte Melik tomb in Divriği, but common to Armenian church architecture for centuries all across the region.⁷¹

The Halifet Gazi tomb in Amasya has by far the largest number and the widest range of roundel patterns and techniques, with fourteen examples, none of which are the same (fig. 2.26). Unlike most of the other structures with roundels, the rather haphazard appearance of the ornament appears to be due to the individual ashlar having been carved separately and then inserted. The roundels on each side of the epigraphic band have had a section cut out to allow them to fit, suggesting that some were constructed beforehand, or the design changed part of the way through the construction process.

The individual carved decorative elements on portals are mostly low relief and either slightly concave or intaglio, but there are two types of exceptions. These consist of the lion sculptures seen at the Alay han, Çifte madrasa and Sivas hospital,⁷² along with the semi-hemispherical *ajouré* bosses projecting from the spandrels of the Külük mosque and the portal attached to the Büyük Karatay madrasa in Konya. Both portals feature bosses of geometrical strapwork with a V-incised surface, but the Kayseri example has a rope motif around the outside edge as well (fig. 2.28). The source of the motif appears to be Georgian church architecture, where examples can be found from at least the 5th/11th century if not earlier.⁷³ In addition, an undated Byzantine stone spandrel in the Antalya Museum (fig. 2.28 A) is evidence of the wide ranging and trans-denominational usage of the motif seen on two of the early 7th/13th century Rūm Saljūq portals in Anatolia, providing further evidence of the highly syncretic nature of the architecture of the period.

⁷⁰ See Mkrtchyan (2002), p.50, fig.60. The church is located near Lachin in Karabagh, south-west of Stepanekurt. The design is similar to one used on the Jam minaret, consisting of a circle containing five smaller overlapping rings.

⁷¹ See *ibid.*

⁷² See chapter four, pp.296-8 for a detailed analysis of the Sivas portal lions.

⁷³ An example is the Ruisi church in Kartia that was built in the 6th century CE but the carvings were moved in the 11th century CE, making that the *terminus ante quem*. There are two bosses either side of a cross in the upper portion of the façade, with the one on the right having a similar rope motif to the ones in Kayseri. See Alpago-Novello (1980), p.460.

The use of multiple roundels set into the portal around and above the muqarnas hood appears to be an early 7th/13th century phenomenon, as later structures only use them sparingly, if at all. There is not the haphazard use as seen on the Halifet Gazi tomb portal or the clusters around the muqarnas hood, as is the case in Kayseri and Afşin. The purpose of the roundels remains unclear, but if they are not purely decorative, it is possible, albeit speculative, that they were seen to impart some sort of apotropaic protection to the building. The location of many of the roundels in spandrels suggests that there may be some as yet unclear connection between the use of roundels and the more overtly apotropaic depiction of interlace dragons and dragon-slayers in arch spandrels. Examples include the ones on the Bāb al-Mawṣil in al-‘Amadiyya (c. early 7th/13th century) and the Bāb al-Tilism in Baghdad (618/1221), discussed below.

The disparate antecedents of roundels, from Armenian stone churches, to brick tombs and mosques in Iran, suggests that these two very different traditions both played a role in the application of roundels to the portals in Anatolia, probably because of the diverse origins of the craftsmen.⁷⁴



Fig. 2.23 – Mama Khātūn tomb enclosure, Tercan (c.596/1200); portal epigraphic roundels
© R. McClary

⁷⁴ For more details of the craftsmen working in Anatolia at the time see chapter three, especially pp.257-270.

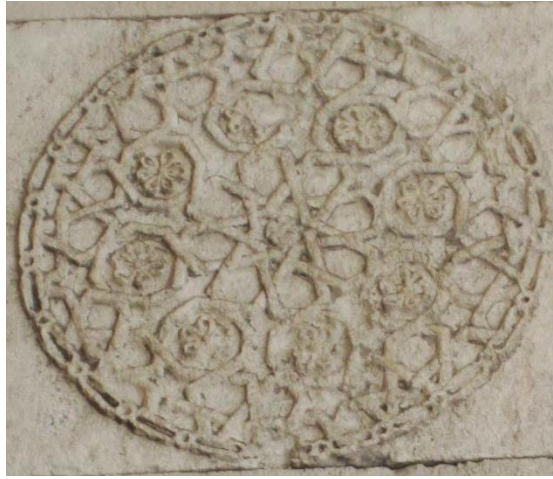


Fig. 2.24 – ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas (614/1217-18); portal spandrel roundel
© R. McClary



Fig. 2.25 – Çifte madrasa, Kayseri (602/1205-6); portal roundels © R. McClary

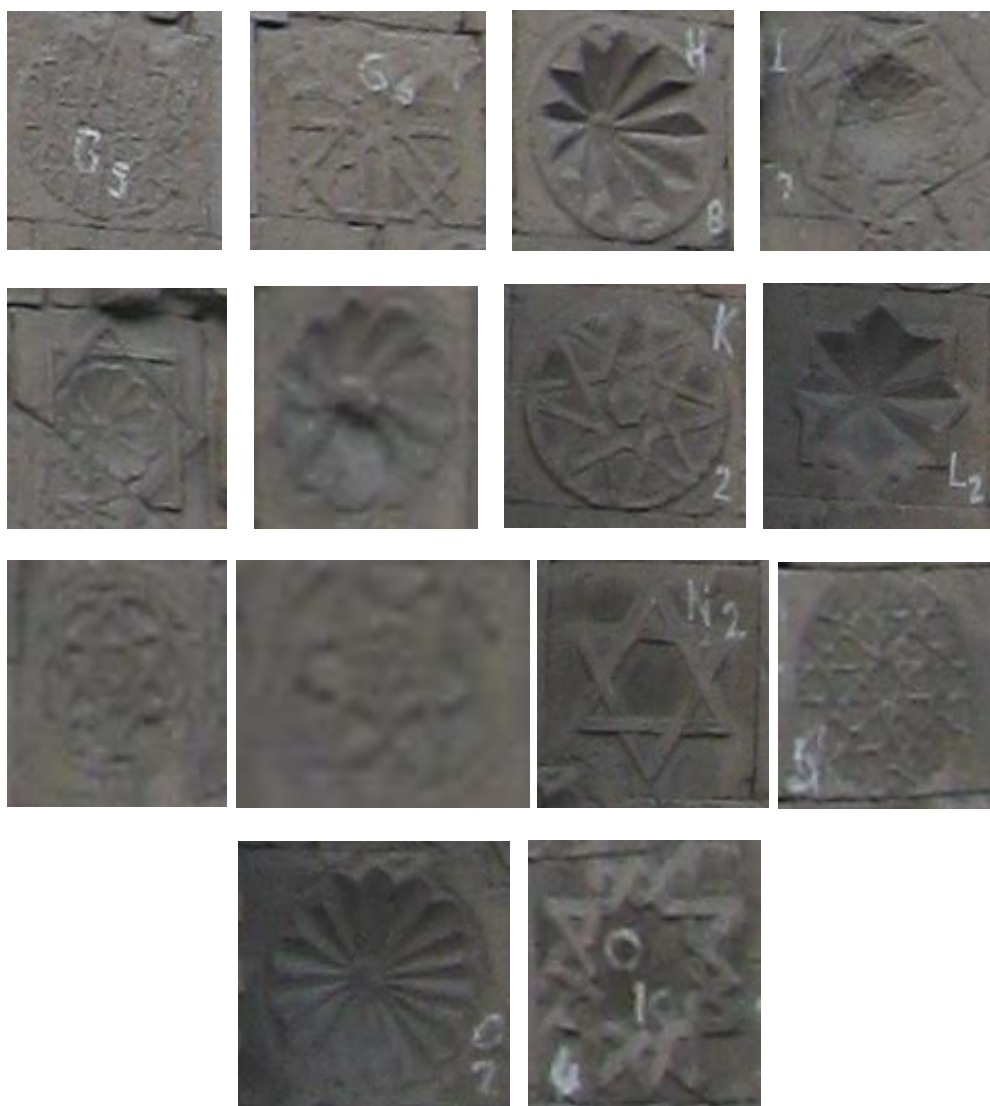


Fig. 2.26 – Halifet Gazi tomb, Amasya (c.606/1209-10); portal roundels © R. McClary



Fig. 2.27 – Eshab-i Kehf *ribāṭ*, Afşin (612/1216); portal roundels (RH side) © R. McClary



A: Byzantine boss, Antalya Museum B: Külük mosque, Kayseri C: Karatay madrasa, Konya
Fig. 2.28 – Anatolian *ajouré* stone spandrel bosses © R. McClary

Niches

The earliest portals, built in the last quarter of the 6th/12th century, with a muqarnas hood or without, do not have small flanking niches on either side of the doorway recess, yet by the beginning of the 7th/13th century this feature had become almost ubiquitous.⁷⁵ Their role remains unclear but the near universal adoption of the motif can be seen in the surviving corpus of structures. The niches tend to follow the form, but clearly not the function of a *miḥrāb* as well as having the appearance, in several examples, of a miniature portal (fig. 2.29). Such similarities across scale and function reflect the fractal-like nature of much Islamic ornament, where patterns and forms can be replicated in any scale and transferred across various materials. There are four

⁷⁵ The exceptions to this are the Ayyūbid-style marble portals in Konya that are of a different typology, and the simpler shallow arched entrance to structures such as the Hekim han. The smaller-scale tomb portal at the Halifet Gazi tomb in Amasya does not have niches either.

different niche plans to be seen in the surviving corpus, with only the Sivas hospital portal niches being irregular, where each one has an irregular four-sided plan (fig. 2.29.F). Half-hexagon plan niches are employed on a portal attached to an earlier Armenian church in Ani, as well as on the Mama Khātūn tomb enclosure portal in Tercan. Half-octagon plans are used at the Alay han near Aksaray,⁷⁶ the Evdir han near Antalya, the Külük mosque in Kayseri and the western portal of the Çifte madrasa, also in Kayseri. The only surviving structure with half-decagon-plan niches is the Eshab-i Kehf *ribāṭ* portal in Afşin, near Elbistan.⁷⁷

Once the niche was introduced they nearly all featured muqarnas hoods, albeit with varying degrees of complexity and numbers of tiers. The exception is the Taş mosque portal niches in Konya which has a simple three faceted half-hemisphere (fig. 2.29 C). Apart from the Evdir han and Sivas hospital niches, which are much larger than the rest, the hoods are carved from a single large block of stone and the two niches facing each other are always identical in form and decoration. The differences in the level of complexity and decoration of the niches is not entirely lineal, as the earlier Mama Khātūn niche (fig. 2.29 A) is much more elaborate than that of the later Taş mosque (fig. 2.29 C). In addition the Evdir han (fig. 2.29 E) is nothing like as complex as the Sivas hospital niches of around the same time. It may be assumed that the difference is one of patronage and budget, as in most of the cases the skill level required to execute complex muqarnas is evidenced by the main hood above the entrance. Within the basic form of the niche with a muqarnas hood there is a wide diversity of specific details, as a brief overview of the corpus shows. Narrow-centred shouldered arches surround the earliest surviving niches, in Tercan, and at the last under discussion, at the Sivas hospital. The rest of the niches in the corpus are either surrounded by a pointed arch, as at the Külük mosque (fig. 2.29 B) and Evdir Han, a rectangular frame, at the Taş mosque and Eshab-i Kehf (fig. 2.29 D) or, in the case of the west portal of the Çifte madrasa in Kayseri, have no other ornament at all. The muqarnas at the Tercan niches are very simple, consisting of only two rows of cells, but the space between the muqarnas hood and the framing arch is

⁷⁶ See Erdmann and Erdmann (1976), figs.6-10 for a plan and a full set of drawings of the muqarnas hood, niches and decoration of the Evdir han portal.

⁷⁷ See below, pp.93-4 for scaled comparison.

decorated in a unique manner, with intricately carved vegetal patterns. In contrast the Çifte madrasa in Kayseri has three attenuated tiers of muqarnas but no other ornament. There are five tiers of muqarnas and the arch is delineated by a band of vegetal carving, while the vertical sides below feature engaged columns with a geometric pattern. Both the rectilinear and curvilinear patterns have a V-shaped surface, making the Külük mosque portal the earliest surviving Islamic example of a motif that was to become ubiquitous in the following decades in the stone architecture of the Rûm Saljûq sultanate. The Afşin niches (fig 2.29 D) are among the most elaborate and feature six rows, including an oversized and very shallow ribbed apex. There is a plain engaged column on each side of the niche and it is surrounded by a rectangular frame that steps in at the halfway height of the muqarnas hood.⁷⁸ In contrast, the niches at the Taş mosque in Konya are the plainest of all, with the hood consisting of the vertical facets of the niche coming to a point of the face. This still gives it the appearance of consisting of three Iranian-style muqarnas cells and the niche is recessed into a simple rectangular frame with a bevelled edge. The Evdir han niches (fig. 2.29 E) have three tiers of muqarnas and are recessed into a shallow pointed-arch frame with no other decoration. The Sivas niches have five tiers with an elaborate frame and a rope motif border, all of which are discussed in greater detail in chapter four.

While it is a small corpus upon which to make hypotheses, the surviving structures are not clustered in any one city or region, but are spread all across the Rûm Saljûq sultanate, and thus can be seen to represent a wider imperial rather than narrow regional style. The general use and overall forms are similar, but the specifics of the details can be seen to differ widely from one building to the next.

⁷⁸ The closest parallel for this form, albeit on a larger scale, is the stepped rectangle around the Taş mosque portal in Konya. However, in that example the step in is proportionally lower.



A: Mama Khātūn tomb, Tercan B: Külük mosque, Kayseri C: Taş mosque, Konya



D: Eshab-i Khef *ribāṭ*, Afşin E: Evdir han, Yeşilbayır F: 'Izz al-Dīn hospital, Sivas

Fig. 2.29 – Comparison of early 7th/13th century niches © R. McClary

Muqarnas bands over niches

One feature that is employed on all but one of the portals with muqarnas hoods and flanking niches is a band of corbelled flat-topped muqarnas projecting out to support the sides of the hood above and thus reducing the width that it has to span. The exception is the Sivas hospital, where there is a small *cavetto* and the beginning and end of the band containing the foundation epigraphy.⁷⁹ There are varying degrees of elaboration of the motif and it is generally related to the level of decoration of the niche below, but the basic principle remains the same.

The Mama Khātūn portal in Tercan has three rows, each consisting of nine and a half cells, above which is a band of cursive epigraphy with the builder's signature on an intricately carved vegetal background (fig. 2.30). The Çifte madrasa has a simple three-tier muqarnas band, while the bands over the niches at the Külük mosque, also in Kayseri, consist of four repeats of a two-tier composition (fig. 2.29 B). There is also an additional projecting element on the front that is not seen on any other portals in the early corpus. Another unique element is the use of three repeats of a three-tier composition projection that gives the springing voussoirs of the door arch a hooked appearance.

The most elaborate example can be seen at the Eshab-i Khef *ribāt* in Afşin (fig. 2.29 D), where there are three tiers of individual cells in a manner similar to the portal in Tercan. The bottom row consists of twelve cells, followed by thirteen cells and then fourteen in the top row. Illustrating the non-linear development of the motif, the contemporary Taş mosque in Konya has a crude band that has the appearance of three small individual hoods, each comprising one tier and a small central recess with a chevron band above (fig. 2.29 C). The portal of the Evdir han has two large, and proportionally rather wide, repeats of three tier compositions with a stylised palm leaf cornice providing further projection above (fig. 2.29 E). It is clear that the function of the motif remains the same, but the specific means varied in every case.

⁷⁹ See chapter four, pp.288-290.

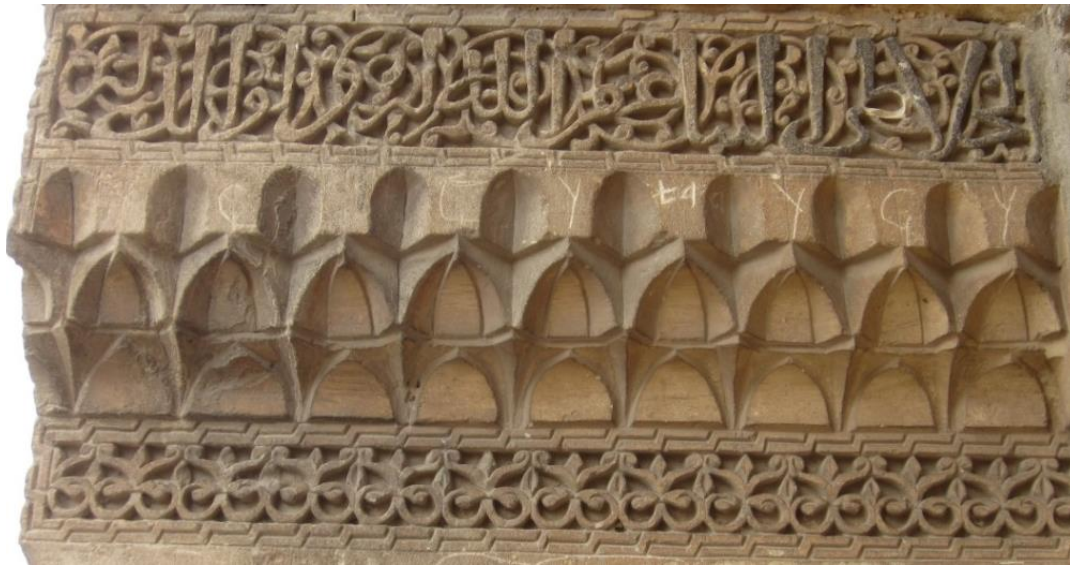


Fig. 2.30 – Mama Khātūn tomb portal, Tercan (c.596/1200); muqarnas cornice band over niche © R. McClary

Voussoirs

The citadel mosque in Divriği (576/1180-81) is the earliest surviving portal and is built in the Iranian manner, with a lintel rather than an arched doorway.⁸⁰ Subsequently almost all the portals have a shallow arch over the doorway.⁸¹ As fig. 2.31 shows, within the framework of the same basic form there was a wide variety of voussoir types and decoration employed in the early 7th/13th century. The surviving examples are spread across a wide area yet three roughly coeval structures, in Amasya, Konya and Afşin, all feature prominent chevron patterns on the lower half of the face of the voussoirs. Unlike most of the other portals, none of these three have any joggling of the voussoirs, as the builders preferred to rely on the pattern rather than the form to display craftsmanship and add dynamism to the appearance of the arch. The only portal in the corpus without any patterns or joggling is the arch at the Evdir han at Yeşilbayır (fig. 2.31 E).⁸² The rest all feature joggled voussoirs with varying degrees of complexity, from the simple form of the Mama Khātūn tomb

⁸⁰ Pope (1981), Vol. VIII. Plates 334-357 show that the great majority of Saljūq tombs feature a lintel rather than an arched entrance.

⁸¹ The Sivas hospital portal has a barrel arch, while the Sitte Melik tomb in Divriği has a lintel. This may have been the result of the local style at the time, or a just because it is a tomb. Most tombs have a lintel rather than an arch over the door, the Halifet Gazi tomb in Amasya being an exception.

⁸² Although the Evdir han voussoirs are totally plain, the keystone being the narrowest of all the voussoirs is uncommon. The only other example is on the (joggled) central voussoir of the Çifte madrasa in Kayseri.

enclosure in Tercan (fig. 2.31 A) to the more complex examples at the Çifte madrasa and Külük mosque in Kayseri (figs. 2.31 B and 2.31 C). The Külük voussoirs do not feature such elaborate surface patterns as seen at Afşin (fig. 2.31 D) but they are more visually striking, with poly-lobed bottom edges and an unusual L-shaped form to the left and right of the uniquely shaped keystone (fig. 2.31 C).

In the majority of the arches, the stones from which the arch springs feature some sort of projecting hook motif. Of the nine portals, only the Alay han, Taş mosque and Sivas hospital do not feature a form of this motif.⁸³ Of the ones that do have a hook, they are all quite simple, with the exception of the Külük mosque, which has a band of muqarnas projecting from the stone below the first voussoir on each side. Although not the largest portal, at 404cm wide, the combination of unique voussoirs and the muqarnas hook at the springing of the arch makes it one of the most striking arch elements of the surviving portals up to 617/1220.

Despite the fact that this is a very small corpus, it is clear that the shallow arch form, joggled voussoirs and hooked springing blocks were, along with the muqarnas hood, features that rapidly became signature markers of a Rûm Saljûq portal. These elements were not combined in the earlier stone portals constructed in Syria and Egypt. There was continuity of the shallow arch and the increasingly complex joggling of voussoirs seen on a number of the portals constructed across the Rûm Saljûq sultanate in the second half of the 7th/13th century.⁸⁴ It is clear that the basic canon, within which a variety of approaches were possible, had been established by the early 7th/13th century.

⁸³ The Afşin portal has suffered losses on one side and extensive weathering on the other, making it impossible to determine whether or not there was originally a hooked form.

⁸⁴ Examples include the Çifte Minareli madrasa, Gök madrasa and Buruciye madrasa in Sivas (all c.670/1271-2) and the Gök madrasa in Tokat (c.675/1277).



A - Mama Khātūn tomb, Tercan (c.566/1200)



B - Çifte madrasa, Kayseri (602/1205-6)



C - Külük mosque, Kayseri (607/1210-11)



D - Eshab-i Khef *ribāṭ*, Afşin (612/1216)



E - Taş mosque, Konya (612/1215)



F - Halifet Gazi tomb, Amasya (c.606/1209-10)



G - Evdir han, Yeşilbayır (c.617/1214-19)



H - 'Izz al-Dīn hospital, Sivas (614/1217-18)

Fig. 2.31 – Comparison of portal voussoirs and arch forms (not to scale) © R. McClary

Framing patterns

When it comes to the framing patterns, there appears to be a degree of underlying unity hiding behind a veil of diversity. As table 2.2 shows, there are some trends to be seen even though there are different patterns on each portal in the corpus. There is a trend away from a rounded surface, towards V-incised decoration of the geometric strapwork, with the occasional exception, such as at Amasya and the Evdir han.

There is also a trend towards increasingly complex patterns, while chevrons are employed regularly, but not universally, from the Alay han onwards. With the notable exception of the two tomb portals in the corpus, all the other portals have a *cavetto* frame around the geometric pattern.

The Taş mosque is an interesting exception, as there is a clear change of style at the height of the door arch (fig. 2.32 F) from a more advanced V-incised eight-fold pattern to a simpler rounded six-fold pattern that is a simple repeat in the manner of the frame at the earlier Çifte madrasa in Kayseri (fig. 2.32 D).⁸⁵ There is no evidence to suggest why this was the case, but it is likely to reflect a change in craftsmen part way through the process, with the person whose signature the building bears, Ramaḍān ibn Kūnis al-Qaysarī,⁸⁶ probably having been the one responsible for the upper portion of the building. Although it is unusual that a less sophisticated style would be used, it does suggest that there was a big difference in the repertoire of the various masons working within the same general framework, in regard to form and architectonic composition.

Portal	Date	Pattern	flat	rounded	V-incised	cavetto	stepped	chevron
Citadel mosque, Divriği	576/1180-81	4-fold	x			x		
Alay han, Aksaray	c.586/1190	8-fold		x		x		x
Sitte Melik, Divriği	592/1196-7	8-fold		x			x	
Mama Khātūn, Tercan	c.596/1200	5-fold		x		x		
Çifte madrasa, Kayseri	602/1205-6	8-fold		x		x		
Külük mosque, Kayseri	607/1210-11	8-fold			x	x		x
Taş mosque, Konya	612/1215	6 and 10-fold		x	x	x		x
Eshab-i Kehf, Afşin	612/1216	8-fold			x	x		x
Halifet Gazi, Amasya	c.606/1209-10	6-fold		x		x	x	
Evdır han, Yeşilbayır	617/1214-20	10-fold		x		x		x
Hospital, Sivas	614/1217-18	9 and 14-fold			x	x		

Table 2.2 – Portal pattern characteristics

⁸⁵ The framing pattern of the Quraysh Baba tomb, in Boyalı, nr. Afyon was built four years later than the Çifte madrasa in Kayseri. There is more of a sense of the pattern extending across multiple stones (fig. 2.32 B) rather than just a single repeat, even though the pattern is similar, and both are examples of the early style of true relief rather than intaglio.

⁸⁶ Sonmez (1995), p.200. The *nisba* al-Qaysarī may, in part, explain the similarity to the earlier Çifte madrasa pattern, yet the Külük mosque (607/1210) which is also in Kayseri, has a very similar pattern to that found on the lower portion of the Taş mosque portal.



A – Citadel mosque, Divriği



B – Quraysh Baba tomb, nr. Afyon



C - Mama Khātūn enclosure, Tercan



D - Çifte madrasa, Kayseri



E - Külük mosque, Kayseri



F - Taş mosque, Konya



G - Evdir han, Yeşilbayır



H - Eshab-i Khef *ribāʿ*, Afşin



I - Halifet Gazi tomb, Amasya

Fig. 2.32 – Comparison of portal framing patterns © R. McClary

The Konya Exception

Although there is some ambiguity surrounding the meaning of the word capital in the context of a peripatetic court with a nomadic background, the city of Konya is generally considered to have been the administrative capital of the Rūm Saljūq sultanate.⁸⁷ This primacy of the city is indicated by Ibn Bībī's description of Konya as the "home to the throne of the state" (*mustaqarr-i sarīr-i dawlat*).⁸⁸ Two of the most visually striking and superficially similar façades to survive from the early 7th/13th century are in close proximity to each other. One is set into the north façade of the citadel mosque (fig. 2.33) while the other now serves as the portal of the

⁸⁷ Redford (1993), p.221. Faroqhi (1997), p.689 states that Sivas was one of the capitals, indicating that Konya was not the only one, while Rogers (1976), p.85 refers to Sivas as the commercial capital of the Rūm Saljūq sultanate.

⁸⁸ Peacock (2013)b. p.198

Büyük Karatay madrasa,⁸⁹ located to the north of the citadel (fig. 2.34). These two portals, with a style that is not found elsewhere in Anatolia, have been used by Redford as evidence to suggest that 'Izz al-Dīn was in the process of a redevelopment of the city, utilising a unique aesthetic for the capital.⁹⁰

It remains unclear which structure came first, or how many years, if any, lie between the two portals. The Karatay portal projects from the surviving portion of the original exterior wall, to the north (fig. 2.34).⁹¹ This projection is in contrast to the citadel portal which does not project, partly due to the steep geomorphology of the man-made citadel mound upon which it is built. It is clear from looking at the movement of the stones that the ground under the citadel mosque portal has shifted and subsided over time. This has had the side effect of revealing the construction methods of the interlaced stereotomic strapwork (fig. 2.33). As has been demonstrated by Rogers, the upper epigraphic band on the Karatay portal, with the date 649/1251-2, has been altered, and does not match the rest of the facade below.⁹² As a result it may be assumed that the portal is likely to be contemporaneous with the one on the citadel, and is assessed here on that basis.

Although the two portals have very similar strapwork decoration in the spandrels, a comparison of their cross-sections demonstrates differences in scale as well as form (figs. 2.35 and 2.36). The flat-topped muqarnas hood, tripartite arrangement, forward

⁸⁹ The original structure to which the portal was attached is now lost. Recent excavations have revealed parts of the foundations of the northern section of the original structure.

⁹⁰ Redford (1991), p.69. The death of 'Izz al-Dīn close to the commencement of the redevelopment of the citadel mosque in Konya makes it impossible to know the true extent of his vision for Konya.

⁹¹ The surviving portion of wall to the north features *ablaq* black and white horizontal bands that would, when new, have added a further level of dynamism to the overall appearance of the structure. The marble ashlar on the west side of the portal has brick infill behind, showing that there was originally a wall to the south as well. The portal probably projected out from the middle of the façade of the original structure.

⁹² Rogers (1976), pp.77-80. He goes on to postulate that the portal survived because of the love of marble in Konya and the ease of replacing the original inscription, as it only required the replacement of one course of the marble at the top of the portal. Rogers (1972), p.364 gives the text from the replaced band of epigraphy, including the final line, *ghafara Allāh liman a'mārahu*, (May God forgive [those/him] who founded [or built] it). Konyalı (1964), p.850 gives the Arabic as; غفر الله لمن امره. Such a term is unusual and is further evidence that the portal is a remnant of an earlier structure. Bakirer and Caner (2009), p.19 shows the more direct route from portal to madrasa, seen in the majority of 7th/13th century Anatolian madrasas. In contrast, the route from the portal to Büyük Karatay madrasa is far more convoluted.

projection and vertical attenuation are all characteristics of the larger Karatay portal which are not found in the citadel mosque portal. The epigraphic panel set in the same north wall of the citadel mosque indicates that the architect was a Syrian named Muḥammad ibn Khawlān al-Dimashqī (عمل محمد بن خولان الدمشقي).⁹³ The Karatay portal does not have the name of a craftsman, but the extensive stylistic similarities of the upper section would indicate that there is a strong possibility that the same person was responsible for both structures, despite the differences between the two. As well as the spandrel decoration and the use of engaged columns, albeit with spirals on the Karatay portal and zig-zags on the citadel one, the frame around the door features a selection of *al-asmāʿ al-ḥusnā* (most beautiful names [of God])⁹⁴ in repeating tongue-shaped sections (figs. 2.33 and 2.39).



Fig. 2.33 – Citadel mosque, Konya (c.616/1219-20); north portal © R. McClary

⁹³ Redford (1991), pp.56 and 73. Konyalı (1964), p.299 gives the text over the door of the portal. See appendix 2.11 A. Redford (2010), p.131 mentions Abū ʿAlī al-Ḥalabī ibn al-Kattānī, another Syrian who worked for ʿIzz al-Dīn. He was responsible for some of the rebuilding work done to the walls of Sinop in the summer of 612/1215.

⁹⁴ Saritoprak (2006), p.39 gives the translation and notes that the term beautiful names is referred to four times in the Qurʾān, but at no point is a number given. The common number of ninety-nine is based on a *ḥadīth* by Abū Hurayra, in which the Prophet states that God has ninety-nine names. It is thought that this was to give an idea of his many names, rather than to limit the number of names.



Fig. 2.34 – Büyük Karatay madrasa, Konya (c. 617/1220); portal © R. McClary



Fig. 2.35 – Citadel mosque, Konya; north portal cross-section © R. McClary



Fig. 2.36 – Büyük Karatay madrasa, Konya; portal cross-section @ 167cm above current grade © R. McClary

Stereotomic strapwork

The two colours of marble which decorate the arch and spandrels are examples of complex structural stereotomy, with the stones forming the interlace pattern being fully bonded with the masonry of the building.⁹⁵ The geometric interlace is incised with two parallel sets of three lines across polygonal stones that add a sense of relief and accentuate the dynamism of the entire composition. The closest parallel to the decoration of the Konya portals is to be found in the decoration of the coeval *miḥrāb* surrounds in a number of the Ayyūbid madrasas in Aleppo, with the Madrasa al-Sultāniyya (619/1223) being the most similar. Unlike many of the other examples, it also has small *ajouré* bosses in the upper corners in the manner of the Karatay portal (fig. 2.37).



Fig. 2.37 – Madrasa al-Sultāniyya, Aleppo (619/1223); *miḥrāb* © R. McClary

⁹⁵ Tabbaa (2001), p.160.

The courtyard iwan of the *mashhad* al-Ḥusayn in Aleppo (c.585/1189) is thought to be the earliest example of strapwork stereotomy.⁹⁶ Redford has argued that the spandrel decoration of the marble portals in Konya represents the monumentalising and externalising of a form previously reserved for the *mihrāb*.⁹⁷ The *mashhad* al-Ḥusayn iwan decoration suggests that the use of the motif in the *mihrāb* context may have been the miniaturisation and internalising of a previously monumental external form.⁹⁸ The lack of projection and muqarnas on the iwan is similar to the form of the citadel mosque portal. In contrast, the large epigraphic panel along the top and projection above the rest of the façade is in the manner of the Karatay portal.⁹⁹

Although the closest parallels for the interlace patterns are to be found in the architecture of Aleppo, there are several monumental examples of lithic interlace to be found in Mesopotamia. The pattern employed on the Konya portals is of a kind that has been described as the “Syrian knot”, although the motif rapidly became dispersed across a wider region.¹⁰⁰ The city of al-‘Amadiyya is about 160km north-east of Mosul, and was within the domain of Badr al-Dīn Lu’lu’, to whom the surviving gate is attributed.¹⁰¹ The al-‘Amadiyya gate (c. early 7th/13th century) features marble interlace in the spandrels of the arch, but the decoration is in bas-relief and monochrome (fig. 2.38). The overlapping semi-circle pattern on the arch voussoirs which form the bodies of the two dragons is the most similar element of the composition. This example illustrates the zoomorphic symbolism of the motif that becomes more stylised in Konya and Aleppo.¹⁰²

⁹⁶ Tabbaa (1997), pp.112 and 118.

⁹⁷ Redford (1991), p.71.

⁹⁸ The Mashhad al-Ḥusayn iwan is enclosed within a courtyard, and thus not as external or visible as the two Konya portals.

⁹⁹ The iwan strapwork features a line through the central upper circle in the manner of the Madrasa al-Sulṭāniyya *mihrāb*, unlike in Konya, while the square motif in the two upper corners resolves in a slightly different manner to that of the Konya portals.

¹⁰⁰ Gierlichs (1995), p.202. In *ibid.*, p.195 the author argues that the decorative and morphological grammar employed in the Byzantine churches in the South Anatolian-North Mesopotamian art region provides a number of the foundations of the visual language employed by the designers of the Islamic structures in the region and beyond.

¹⁰¹ Janabi (1982), p.253. Although he was not ruling until 631/1233 (*ibid.*, p.53) it is possible that the gate was built prior to that date, as he was appointed regent from 607/1210 onwards.

¹⁰² Janabi (1982), p.353 points out that the coiled and elongated bodies of the dragons form the arch of the portal. See *ibid.*, pl.175. The portal has been recently rebuilt after extensive damage and earlier images give a more accurate impression of its original appearance.



Fig. 2.38 – Bāb al-Mawṣil, al-ʿAmadiyya, Iraq (c. early 7th/13th century) (after Janabi (1982), pl.175)

Another contemporary of the Konya structures was the Bāb al-Tilism in Baghdad, dated to 618/1221.¹⁰³ Although it was set into a brick tower that formed part of the city wall, the portal itself consisted of marble carved spandrels, joggled voussoirs and columns. The bas-relief interlace was more organic and free-flowing than the other examples thus far seen, and clearly formed the bodies of two dragons that flanked a seated ruler, probably Caliph al-Nāṣir, at the apex of the arch.¹⁰⁴ It was the only known example of its kind in Baghdad, and demonstrates the wide-ranging geographical scope, if limited number, of this broad type of portal in the first two decades of the 7th/13th century.

The corners of the al-ʿAmadiyya spandrels are decorated with a figural relief of a dragon-slayer with a sword. In Mesopotamia the figural elements replace the

¹⁰³ *Ibid.*, p.252 and pl. 6. The gate was destroyed in 1917 by the British.

¹⁰⁴ *Ibid.*, p.252 and pl. 6. Pancaroğlu (2004), p.160 disagrees, suggesting that the whole composition is an apotropaic device and that the seated figure is a personification of the sun.

rectilinear interlace. It is tempting to think that on the religious buildings of Konya and Aleppo, the aniconic rectilinear and curvilinear motifs act as abstracted symbols for the apotropaic depiction of victory over evil, a theme so clearly displayed in figural form in the contemporary secular city gates in al-ʿAmadiyya and Baghdad. The overlapping semi-circles on the arch are the unifying element across the broader region.

Flanking panels

Although reminiscent of *kundakari* (tongue and groove woodwork), the pattern in the panels that flank the entrance of the Karatay portal (fig. 2.39) had previously been used in brick on a tomb tower at Kharraqān, in western Iran (459/1067).¹⁰⁵ An earlier and larger scale example of the pattern can be seen in one of the bands on the upper section of the cylindrical brick-built minaret shaft at Simnān in Iran (422-425/1030-34).¹⁰⁶ The pattern is much closer in scale to the Karatay example, although it is entirely monochrome.¹⁰⁷ At Simnān there is a bar crossing the middle of the main shape of the composition. As the swastika-based pattern migrated west and was reduced in scale and relief, the bar was truncated and only the central section remained, as a small square in the middle.

The Karatay portal features a tripartite form with torus-framed geometrical panels flanking an arched entrance with engaged columns. This is a unique format in the surviving corpus of Anatolian portals. Like the source of the strapwork interlace, it is in Aleppo where a similar form and probable precedent may be found. The *miḥrāb* of the al-Zāhiriyya madrasa (616/1219) appears to be the only Ayyūbid example in Aleppo that has flanking geometrical panels similar to the Karatay portal.¹⁰⁸

¹⁰⁵ See El-Said and Parman (1976), p.16.

¹⁰⁶ Anisi (2006), pp.219-221.

¹⁰⁷ A similar pattern can be seen in a monumental form on the gate of the Ribāṭ-i Sharaf caravanserai in Iran, dated to the mid-6th/12th century. Makovicky (1989), p.974 states that it has the same geometrical symmetry as the Karatay example.

¹⁰⁸ See Tabbaa (1997), p.141. The anepigraphic building may have been under construction in 610/1213 judging by the conflicting dates given by Ibn Shaddād and Ibn al-Shīnah. Although the geometric pattern is not the same, and it is a semi-circular plan *miḥrāb* rather than a portal with muqarnas, the frontal composition is a close parallel.



Fig. 2.39 – Büyük Karatay, Konya; right-hand side detail of portal © R. McClary

Epigraphy

The most beautiful example of epigraphy, both in terms of design and execution, to survive from the early period of Islamic architecture in Anatolia can be found on the two panels either side of the flat topped muqarnas hood of the Karatay portal (figs. 2.40 and 2.41). Selectively integrated with the text are sinuous split palmette elements of the most exquisite nature. Unfortunately the content of the text does not

provide any information regarding the date or patron of the portal or the lost structure to which it provided access. Despite this lack of information, the quality of the execution does attest to the presence of calligraphers and hard stone masons of the highest skill in Konya in the early 7th/13th century. The previously untranslated inscription panels on the lower portion of the portal appear to read:¹⁰⁹

رب اؤن عنى ان اشكر نعمتك التي انعمب عليّ وعلى والدي وان اعمل
صالحاً ترضاه وادخلنى برحمتك في عبادك الصالحين

(L) *Rabb awwin*¹¹⁰ ‘*annī an ashkur ni‘mataka al-latī an‘amta*¹¹¹ ‘*alayya wa*
‘*alā wālidī wa an a‘mal* (R) *ṣāliḥan tarḏāhu wa-adkhilnī bi-rahmatika fī*
‘*ibādika al-ṣāliḥīn*¹¹²

"O Lord! (grant) that I give thanks to you for your gifts that you have bestowed on me and on my father and that I may make a good deed that will please you and make me to enter among your righteous servants [i.e. in Paradise]"



Fig. 2.40 – lower portal inscription (R), Büyük Karatay Madrasa portal, Konya © R. McClary



Fig. 2.41 – lower portal inscription (L), Büyük Karatay Madrasa portal, Konya © R. McClary

¹⁰⁹ Konyalı (1964), p.849 gives a similar reading but does not provide a translation.

¹¹⁰ This is a most unusual word.

¹¹¹ Lit. *an‘amba*.

¹¹² The epigraphy was translated with the generous help of Bruce Wannell, Dr. Alain George and Professor Paul Starkey.

In addition to the two panels, the frame around the door features *ḥadīth* in tongue-shaped sections. There are thirteen on each side and eleven along the top, including the corners.¹¹³

Elbow brackets

Following the Latin occupation of Jerusalem, elements of Crusader stone-carving motifs entered the Islamic canon as a result of the re-conquest of the city by the Ayyūbids. The marble elbow brackets on the citadel portal (fig. 2.42 A) are a slightly simplified copy of the ones seen on the north façade of the al-Aqṣā mosque in Jerusalem (fig. 2.42 B).¹¹⁴ The building had been remodelled and used as a palace by the Knights Templars in the 6th/12th century. Following the re-consecration of the building as a mosque in 583/1187, the north porch was rebuilt in 614/1217-18 by Ṣalāḥ al-Dīn's nephew al-Malik al-Muʿazzam.¹¹⁵ The brackets, referred to as angle shafts by Hamilton, are cut from single blocks of medium-hard limestone, and are incorporated into the eight piers of the three central bays of the north porch.¹¹⁶ The conspicuous appropriation of an identifiable aesthetic of the defeated Christians,¹¹⁷ on the most prestigious mosque in Jerusalem, suggests that it may have been intended as a sign of the victory of Islam and subjugation of Christianity. It may be the case that ʿIzz al-Dīn was attempting to make a similar political statement through the prominent use of an array of Ayyūbid decorative elements on the portal of the most prestigious mosque in the Rūm Saljūq sultanate.

¹¹³ Konyalı (1964), p.847-8. For the full Arabic text see appendix 2.11 B.

¹¹⁴ In both cases, the brackets are purely decorative as they have no load bearing role, having been cut from the impost block that supports the arch above.

¹¹⁵ Grabar (2005), p.142. The east and west façades date from the Latin occupation, but the work on the north façade appears to be datable to the work on the north porch that represents Muslim patronage using crusader motifs, or maybe even spolia, such as the elbow brackets.

¹¹⁶ Hamilton (1949), pp.39-40. He goes on to suggest that the blocks may be 6th/12th century spolia. See *ibid.*, p.40, fig.21 for a plan showing the location of the blocks, along with plates XXII.3, XXIII.1-6 and XXIV.1-4 for images of all the surviving blocks on the porch in 1949.

¹¹⁷ Hazard (1977), p.80 describes the elbow bracket as a characteristic invention of the crusaders. Surviving examples in a Christian context can be found on the western wall of the cloister of the Church of the Holy Sepulchre in Jerusalem.



A: Citadel mosque, Konya; N portal B: Aqṣā mosque, Jerusalem (614/1217-18); N façade
Fig. 2.42 – Elbow brackets © R. McClary

Conclusion

The aesthetic developed in Konya does not become the standard for later portals built in Anatolia. Similar strapwork is seen on the Sultan han near Aksaray (626/1228-9), but it is relegated to the spandrels of the small flanking niches, rather than the front of the portal.¹¹⁸ The same motif is also seen in monochrome on the frame of an epigraphic panel (dated to 642/1244) that was set into the walls of Antalya.¹¹⁹

Allen's description of the Zangid architecture of Aleppo combining classical details in a non-classical scheme¹²⁰ may equally be applied to the two Konya structures, and to the Karatay portal in particular. They combine traces of the 6th/12th century classical revival architecture of Zangid Aleppo, such as Corinthian-style capitals and torus mouldings, with Ayyūbid innovations of bi-chrome strapwork interlace. These elements were employed alongside a unique flat-topped muqarnas hood, and a pattern previously employed on the brick architecture of Iran, reproduced in marble to create a new aesthetic.

Reuse and appropriation of the architectural forms and symbols of the vanquished by the victor was a common trait in many pre-modern societies.¹²¹ Perhaps the most famous example of this phenomenon, in the medieval Islamic context, is the use of a

¹¹⁸ The Sultan han also features the name of Muḥammad ibn Khawlān al-Dimashqī.

¹¹⁹ See appendix 4.1, fig.4.1.4 B.

¹²⁰ Allen (1986), p.34.

¹²¹ Lehmann (2008), p.132 cites the actions of Hindu kings as well as the use of Hindu architectural elements in the early mosques of north India.

Gothic portal brought from a church in Acre in the funerary madrasa of the Mamlūk sultan al-Nāṣir Muḥammad ibn Qalawūn, completed in 703/1303.¹²² The clearest examples in the Rūm Saljūq context are the re-use of Byzantine spolia, particularly in Akşehir but also in Atabey and Konya.¹²³ Regarding ‘Izz al-Dīn’s apparent appropriation of a strongly Ayyūbid aesthetic on the portals in Konya, it may be the case that its use was an attempt to project an image of victory and dominion over them, political reality notwithstanding. The basis for such an argument lies in his initially successful, but ultimately catastrophic campaign into Ayyūbid Aleppo in 615/1218.¹²⁴ The choice of an overtly Aleppine aesthetic cannot be disentangled from the political claims that ‘Izz al-Dīn had over Aleppo. It had previously belonged to his uncle on his father’s side,¹²⁵ and it was this that led him to believe that the upstart Ayyūbids had a less valid claim to rule it.

The hiring of Syrian craftsmen, rather than local or Iranian ones, resulted in the appropriation of what was a specifically Aleppine Ayyūbid aesthetic. It was introduced into the nexus of Rūm Saljūq power, and the newly synthesised aesthetic was projected across the city in what could be viewed as a symbolic appropriation of the Ayyūbids and their lands. The use of an Iranian aesthetic in the major commission of ‘Izz al-Dīn in Sivas may be seen as having served a similar function, on a grander scale, in regard to the former lands of the Great Saljūqs in Greater Iran. This use of architecture as a physical cypher for universal dominion is reflected in the sultanic titulature of the period, which also tends towards claims of universal dominion.¹²⁶

¹²² Behrens-Abouseif (2007), pp.152-154. The portal was brought to Cairo by the building’s original patron, Ktbugha, following the triumphant campaign of al-Ashraf Khalil against the Crusaders in 1291 CE. The portal is shown in *ibid.*, p.154, fig.98.

¹²³ The Ferruh Shah mosque (621/1224) in Akşehir is one of the most notable examples. See fig. 3.1. Other examples include the Ertokuş tomb façade (621/1224) in Atabey and the Unfinished tomb in Konya.

¹²⁴ Cahen (2001), p.51 states that in 1218, along with his Ayyūbid vassal Afḍal, ‘Izz al-Dīn occupied the north of the province of Aleppo, but was forced, by al-Ashraf the Ayyūbid ruler of Mesopotamia, to retreat to Elbistan and abandon all his conquests.

¹²⁵ Mecit (2014), p.107.

¹²⁶ The foundation inscription of the ‘Izz al-Dīn hospital in Sivas describes him as “*the pillar of Islam and Muslims, the Sultān of the land and the sea, the crown of the Saljūq family... Amīr of the Believers*”. See chapter four, p.288 for the Arabic text.

Portals: conclusion

The close study of the early Muslim portals in Anatolia demonstrates the rapid emergence of a high level of conformity in regard to the basic rules of composition, but with a wide array of possible permutations, in the manner of an Indian raga. There is a predominantly Iranian-inspired aesthetic, reflective of the broader political aspirations of the dynasty, alongside Syrian and Armenian-derived decorative and formal elements that demonstrate the syncretic nature of the region. There was the clear adoption of the innovative and technically advanced techniques of muqarnas hood construction as a defining element of the Rūm Saljūq sultanate.

The preceding analysis of the surviving corpus of portals has shown that a framework of characteristics emerged during the course of the period of study. The diversity of the craftsmen, and their different approaches within that framework, led to the individual variations in the corpus, but in nearly all cases the basic characteristics were the same. The portals project from the wall and are framed with a *cavetto*. Inside the *cavetto* are receding fillets decorated with patterns, initially relief and geometric, and subsequently intaglio, and often featuring curvilinear decoration as well. The inner corners on either side of the entrance feature engaged, or occasionally freestanding, columns. In all but the tomb portals, the sections at 90 degrees to the entrance feature semi-polygonal plan niches with small muqarnas hoods. With the exception of the earliest surviving portal, at the citadel mosque in Divriği, the doorways are arched, with either joggled or plain voussoirs, under a multi-tier muqarnas hood. Although this style of portal emerged from a Turko-Muslim brick milieu, it can be associated almost entirely with the Rūm Saljūqs, as they took control of most of Anatolia in the late 6th/12th century and built stone portals.¹²⁷ The portals gave an increasingly unified aesthetic to a broad array of typologically varied structures over a wide geographical area by the end of the second decade of the 7th/13th century, regardless of the individual patron.

Unlike many of the tombs, and most of the minarets, the projecting muqarnas hood portals are constructed only in stone across the whole period, predominantly either limestone, or the black volcanic rock of the Kayseri region. The two portals in Konya

¹²⁷ See the historical overview of the period in chapter one, pp.8-28.

demonstrate the unique Ayyūbid-inspired aesthetic, executed in marble, which was developed near the end of the reign of ‘Izz al-Dīn Kay Kāwūs I. These two portals demonstrate the ecumenical approach to architectural development that typifies the emerging style of architecture, particularly the portals, of the late 6th/12th and early 7th/13th centuries of Anatolia.

The stone-built multi-tier muqarnas hood inside a frame of geometric patterns and a *cavetto* with flanking niches and engaged columns had become something of a symbol of the Rūm Saljūqs by the early 7th/13th century. The proliferation of such structures across the Rūm Saljūq lands, but not to any great extent those of the other Turko-Muslim dynasties of Anatolia,¹²⁸ or in the Arab lands to the south¹²⁹ allowed them to perform a uniting role. They gave the architecture, and by extension the polity responsible for their construction, a more homogenous visual aesthetic. The portals continue to this day to exude a sense of unity across the broad region that was under direct Rūm Saljūq rule, or their hegemony, even though in reality the region consisted of a diverse mix of ethnic, linguistic and religious groups. The process was enacted in a rather *ad hoc* and organic manner, as craftsmen who worked in the rapidly developing regional style erected structures across the scale of patronage. The process did not require a direct top-down directive from the sultan, yet the overall effect was to echo the imperial aesthetic of the major foundations across the region, in a wider array of structures at all levels of patronage.

¹²⁸ Exceptions to the general trend include the Mama Khātūn tomb enclosure portal in Tercan, and a number of Mqargrdzeli structures in Armenia.

¹²⁹ The examples in Cairo are a Mamlūk phenomenon of the period from the late 7th/13th century onwards.

City	Building	Position	Date	Location
Divriği	Citadel mosque	N façade	576/1180-81	Lat: 39° 22' 32" N Lon: 038° 07' 24" E
Aksaray	Alay han	S façade	c.586/1190	Lat: 38° 31' 07" N Lon: 034° 21' 15" E
Divriği	Sitte Melik tomb	S façade	592/1196-7	Lat: 39° 22' 25" N Lon: 038° 07' 09" E
Tercan	Mama Khātūn tomb	S of enclosure	c.596/1200	Lat: 39° 46' 40" N Lon: 040° 23' 11" E
Kayseri	Çifte madrasa	S façade	602/1205-6	Lat: 38° 43' 26" N Lon: 035° 29' 03" E
Kayseri	Külük mosque	NE corner	607/1210-11	Lat: 38° 43' 08" N Lon: 035° 28' 52" E
Antalya	Evdır han	S façade	c.617/1214-20	Lat: 36° 59' 17" N Lon: 030° 34' 46" E
Amasya	Halifet Gazi tomb	S facet	c.606/1209-10	Lat: 40° 38' 58" N Lon: 035° 49' 24" E
Konya	Taş mosque	E façade	612/1215	Lat: 37° 51' 53" N Lon: 032° 29' 38" E
Afşin	Eshab-i Kehf <i>ribāṭ</i>	S façade	612/1216	Lat: 38° 14' 57" N Lon: 036° 51' 16" E
Sivas	Kay Kāwūs I hospital	W façade	614/1217-18	Lat: 39° 44' 54" N Lon: 037° 00' 52" E
Konya	Citadel mosque	N façade	c.616/1219-20	Lat: 37° 52' 25" N Lon: 032° 29' 34" E
Konya	Karatay madrasa	SE exterior	c.617/1220	Lat: 37° 52' 29" N Lon: 032° 29' 35" E

Table 2.3 – Portal corpus and locations



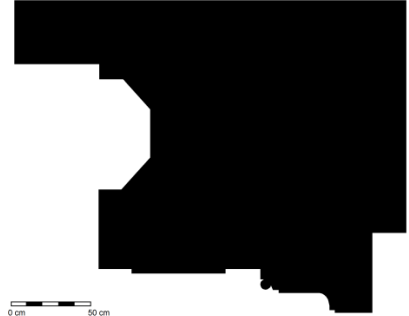
Citadel mosque portal, Divriği (576/1180-81)



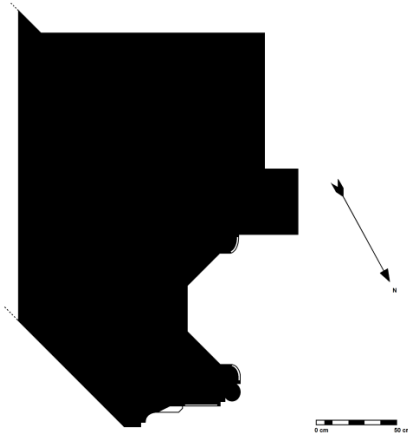
Sitte Melik tomb portal, Divriği (c.592/1196-7)



Mama Khātūn tomb portal, Tercan (c.596/1200)



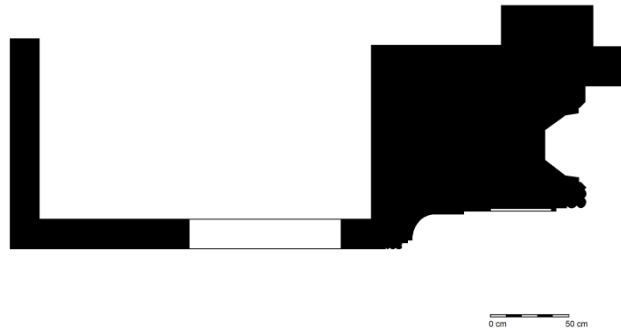
Çifte madrasa portal, Kayseri (602/1205-6)



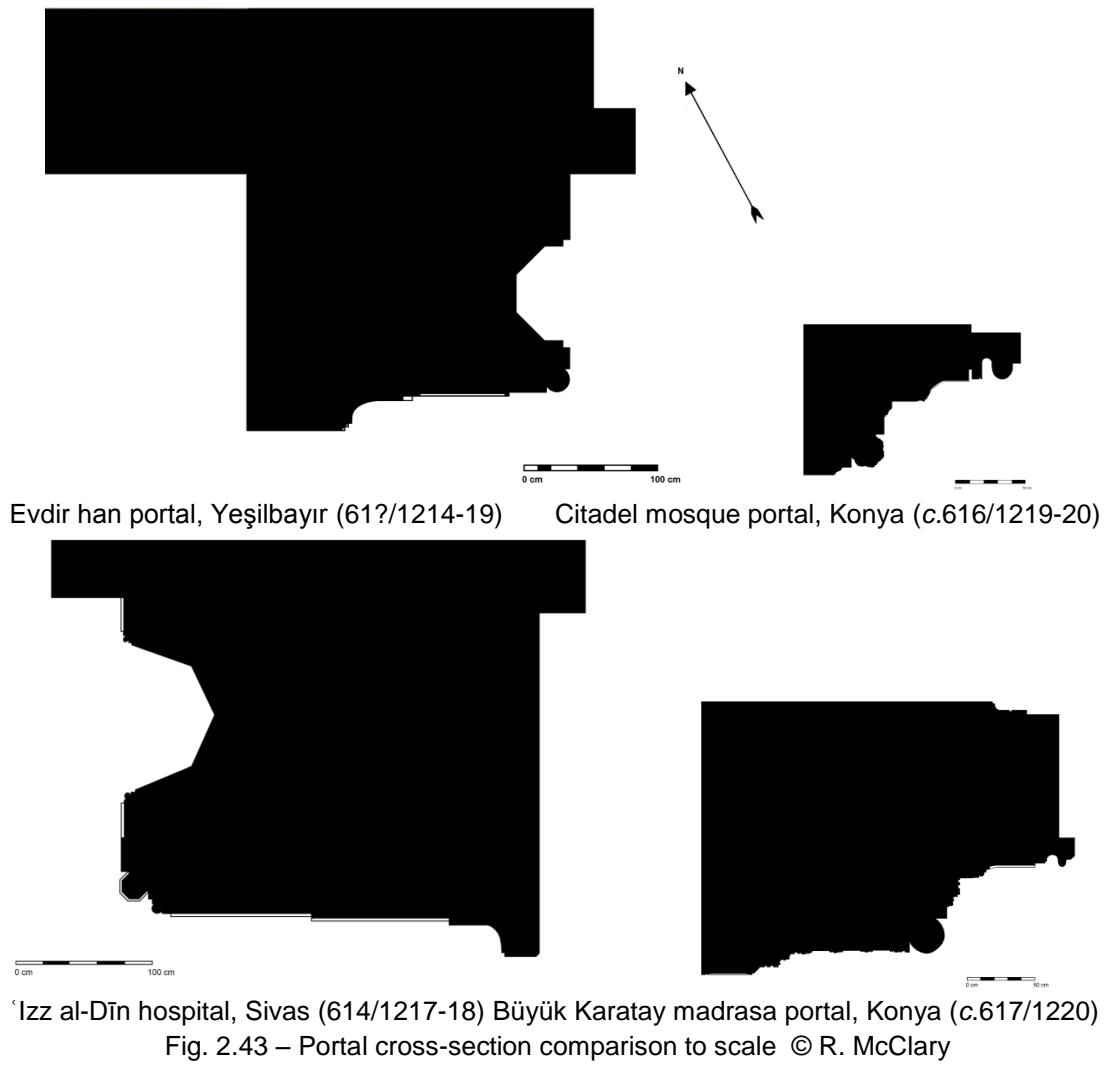
Külük mosque portal, Kayseri (607/1210-11)



Eshab-i Kehf *ribāʿ* portal, Afşin (612/1216)



Taş mosque, Konya (612/1215)



TOMBS

Introduction

In contrast to the form and decoration of the portals and minarets, the designers and builders of the early Muslim tombs in Anatolia, working in both brick and stone, can be seen to have drawn deeply from the well of the Ildegüzid funerary architecture in Nakhchivān and Marāgha especially, but also more generally from the architecture of north-west Iran.

Brick is the primary medium of transfer for many of the elements of tomb architecture from Iran to Anatolia, but owing to the lithic nature of the indigenous architectural tradition in Anatolia, stone examples of octagonal tombs survive which date from the last quarter of the 6th/12th century onwards. The earliest examples can be found primarily, but not exclusively, in Kayseri.¹³⁰ With the exception of the Sitte Melik tomb in Divriği and the Halifet Gazi tomb in Amasya, (the portals of which are discussed above), the brick tombs feature a greater degree of surface articulation and decoration than those in stone. Because of this, it is the brick-built structures that are the primary focus of this section, with a brief overview of the stone corpus included afterwards for context.

One of the aims of this study of the early tombs is to demonstrate the continuity of significant elements of form and decoration from the Ildegüzid funerary architecture of Nakhchivān into the Anatolian tradition. There is a clear lineal connection from the Yūsuf ibn Kuthayyir tomb in Nakhchivān City (557/1162-3) through the Mengüjekid tomb in Kemah (c.586/1190) to the Rūm Saljūq Kırk Kızlar tomb in Niksar (c.611-617/1215-20). Taken together, these three structures cover the entire period of this study.

The Ildegüzid connection

From the second half of the 6th/12th century until the defeat of the Ildegüzids in 622/1225 by the forces of the Khwārazm Shāh,¹³¹ a vibrant and distinctive style of

¹³⁰ There is not space to give a detailed analysis of all the early Islamic tombs that survive in Anatolia, but a few are examined in detail in appendix 2. For a comprehensive overview of the corpus see Önköl (1996).

¹³¹ Bosworth (1996), p.199.

funerary architecture was developed around Marāgha in Iran, and in the region that is now the Nakhchivān Autonomous Region of the Republic of Azerbaijan.¹³² Nakhchivān is located at the point where Turkey, Armenia and Iran now meet and there are the full or partial remains of four tombs that survive from the period of this study. In addition, there are three surviving tombs in Marāgha; the square Gunbad-i Surkh (542/1148),¹³³ the Round Tower (563/1168) and the octagonal Gunbad-i Kabūd (593/1197),¹³⁴ along with one in Urmia, the circular Se Gunbad (580/1180).¹³⁵ Formal and decorative elements from one or more of these structures can be found in most of the early brick tombs of Anatolia. The earliest dated structure in Nakhchivān is the octagonal tomb of Yūsuf ibn Kuthayyir¹³⁶ in Nakhchivān City (557/1162-3) that is signed by ‘Ajamī ibn Abī Bakr al-Nakhshiwānī (figs. 2.44, 2.45 and 2.58).¹³⁷ It is this structure which is closest in form, scale and elements of decoration to the Mengücek Gazi tomb in Kemah.

The largest and most elaborately decorated of the surviving tombs is the Mu’mina Khātūn tomb in Nakhchivān City (582/1186-7), also signed by ‘Ajamī ibn Abī Bakr al-Nakhshiwānī. The tomb tower is ten-sided, with tall shallow niches with muqarnas at the top on the external facets and extensive use of glazed decoration. A band of Kufic around the top is a motif subsequently seen on the Bekar Sultan tomb in Gülağaç, near Aksaray, although the scale and use of colour are greatly reduced in the later Anatolian example.

¹³² Bosworth (1993), p.922 states that the limited survival is due to the devastation of Nakhchivān City during Mongol rule, as recounted in an eyewitness report by Rubruck based on his visit in 1253 CE.

¹³³ See Godard (1936), pp.131-134 and Pope (1939), Vol. IV, pls.341 A and B. Wilber (1976), p.36 notes that the building features the name of the builder, *Bakr Muḥammad al-banna’ ibn Muhsin al-mi’mar*.

¹³⁴ See Pickett (1997), pp.23-24 and pls.9 and 10.

¹³⁵ Although the tomb is round it has a flat entrance facet very similar to the ones in Nakhchivān, Marāgha and Kemah. The Urmia tomb is closest in style to the earlier Round Tower in Marāgha.

¹³⁶ Jacobsthal (1899), p.20 suggests, basing himself on the titlature in the foundation epigraphy over the door, that Yūsuf ibn Kuthayyir was a minister of state with high social standing.

¹³⁷ Gink and Turánszky (1979), p.31. Bosworth (1993), p.922 gives the correct date and full name of the patron: *al-ra’īs al-ajall Rukn al-Dīn Jamāl al-Islām muqaddam al-mashā’ikh Yūsuf ibn Kuthayyir*. *Ibid.*, p.922 gives the full name of the person that the Mu’mina Khātūn tomb commemorates as *malikat Jalāl al-Dunyā wa’l-Dīn Mu’mina Khātūn*.

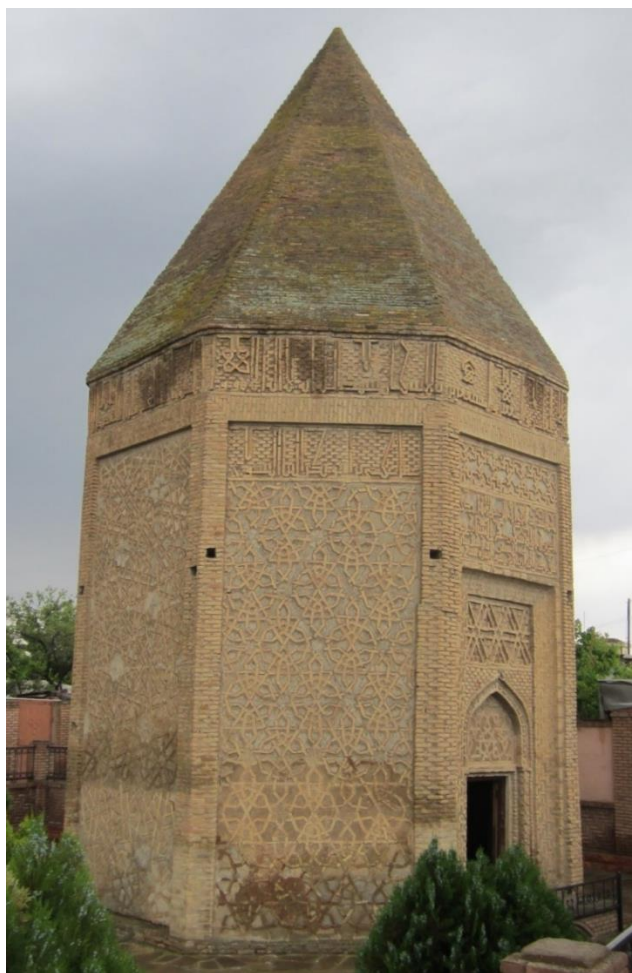


Fig. 2.44 – Yūsuf ibn Kuthayyir tomb, Nakhchivān (557/1162-3) © R. McClary

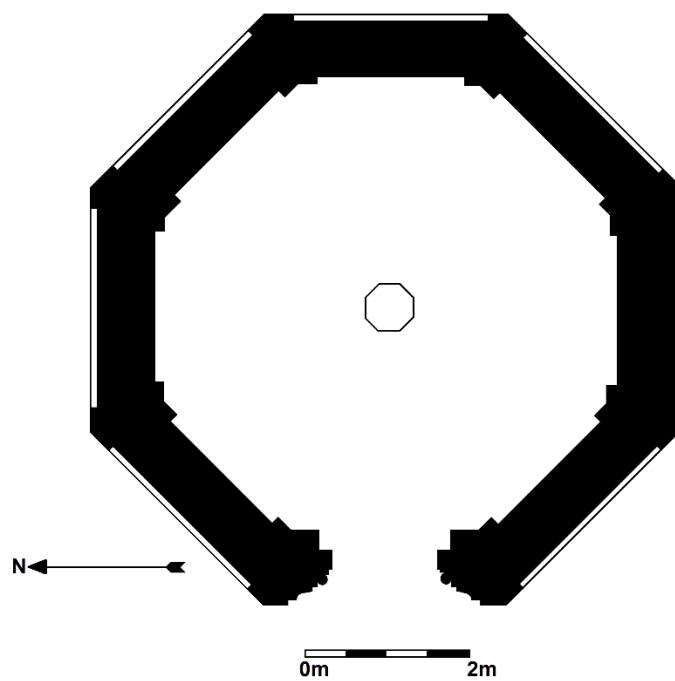


Fig. 2.45 – Yūsuf ibn Kuthayyir tomb, Nakhchivān; ground plan © R. McClary

To the south-east of Nakhchivān City is the stone-built Gulestān, or Juga tomb, which appears to date from the early 7th/13th century.¹³⁸ It is just outside Julfa, an area that was predominantly Armenian,¹³⁹ which may well explain the lithic rather than brick medium of construction, and it employs the bevelled corners later seen on the minaret bases of Saljūq Anatolia. In the mountains to the north-east of Julfa are the remains of the (undated)¹⁴⁰ brick-built Gīlān tomb.¹⁴¹ Only about a meter of the square plan superstructure survives (fig. 2.46) but the octagonal crypt with a central column remains intact. There are fragments of the strapwork¹⁴² decoration, and the articulated plan of the upper section can be seen from the remains of the structure. The square form of the upper section, and the remote location (in the mountains between Julfa and Ordubad) are both characteristics of the Melik Gazi tomb in Pinarbaşı discussed below, as is the treatment of the round engaged columns. These similarities make an interesting comparison, regardless of the uncertainties that surround the relative chronology of the two structures.

¹³⁸ The tomb is visible but currently inaccessible, as it is on the other side of the border fence.

¹³⁹ Canby (2000), p.96 states that the whole population of the city of Julfa, almost all of whom were Armenian, were forcibly removed by Shāh ‘Abbās as part of a scorched earth policy in 1013/1604 and relocated to the quarter of Işfahān called New Julfa. Carswell (1968), p.3 cites the late sixteenth century English traveller John Cartwright, who reported that there were 10,000 Christians living in Julfa, both Armenian and Georgian, and that the city was built of stone.

¹⁴⁰ Presumably the tomb predates the Khwārazmian conquest of 622/1225 by the last Khwārazm Shāh, Jalāl al-Dīn Mengüberti (r.617/1220-628/1231). After the Khwārazmian victory in 622/1225 there does not appear to have been any major construction in the former Ildegüzid lands until the later part of the 7th/13th century. For more details of the conquest see Bosworth (1996), pp.180 and 199.

¹⁴¹ The Gīlān Tomb was discovered in 1979, and the publications that mention it are the Naxçıvan Ensiklopediyası (2005), pp.208-209, which includes unattributed images from an earlier publication, along with Nizami (1991) and Salamzade and Memmerzade (1985), all in Azerbaijani. Naxçıvan Ensiklopediyası (2005), p.209 shows a plan and drawing of the crypt interior. See Yazar (2007), pp.461-462, pls.293-295 for images of the crypt. The Gīlān tomb is in a remote mountaintop location and owing to the political situation and proximity to the Iranian border it is currently inaccessible.

¹⁴² In the context of the brick tombs, the definition of strapwork as given in Wilber (1939), p.34 is used. He describes it as a “pattern formed of thin strips of material which are raised somewhat above the level of the surface they are embedded [into]”.



Fig. 2.46 – Gīlān tomb, Nakhchivān (c. 2nd half 6th/12th century) (after Naxçıvan Ensiklopediyası (2005), p.208)

Mengücek Gazi tomb, Kemah

It was during the rule of Bahrāmshāh ibn Dāwūd (r.560/1165 - 622/1225)¹⁴³ that the court in Erzincan became a cultural centre,¹⁴⁴ and the tomb in Kemah was constructed. The Yūsuf ibn Kuthayyir tomb predates the octagonal Mengücek Gazi tomb in Kemah, located 42km west of Erzincan (fig.1.1). The two structures are very similar in form, scale and decoration, although the Kemah tomb does not have the geometric decoration in the recessed rectangular panels. The closest similarities between the two structures include the decoration of the pointed arch over the door, which consists of lozenge shapes. Also, in both cases, the blind panel over the door is decorated with hexagon-based strapwork with bow-tie forms¹⁴⁵ around a central “Solomon seal” star.¹⁴⁶ The decoration of both tympana may be compared with the

¹⁴³ Bosworth (1996), p.217.

¹⁴⁴ *Ibid.*

¹⁴⁵ See Gink and Turánszky (1979), pl. 44. The Kemah tomb has a turquoise glazed bowl in the middle of the Solomon seal, whereas the Nakhchivān tomb has incised patterns in the plaster instead.

¹⁴⁶ The use of the “Solomon seal” may be apotropaic, as Pancaroğlu (2004), pp.152-3 states that Solomon was regarded as the archetypal exorciser of demons.

earlier entrance portal of the Gunbad-i Surkh in Marāgha.¹⁴⁷ The Nakhchivān and Kemah portals both feature prominent, if slightly different, patterns of mortar incisions and they both have square holes in the upper portion of the projecting corners of the facets.¹⁴⁸ The tomb in Kemah appears to date from the last decade of the 6th/12th century,¹⁴⁹ to judge from its decoration, use of glazed bowls and crypt design, making it about thirty years younger than the Yūsuf Ibn Kuthayyir tomb. In contrast to the other seven facets, which are quite austere in their decoration, the Kemah entrance facet is highly articulated, and features extensive decoration. At both tombs the arch around the blind panel is decorated with inset unglazed lozenges. In addition to the lack of geometric decoration in the panels, another small difference between the two buildings is the use in Kemah of a bevel, rather than *cavetto* frame around the entrance (figs. 2.47 and 2.48). As the comparison of the two tympana shows, the underlying geometric pattern employed is identical. A single repeat of the pattern, rather than just a part, is employed in Kemah and there is a glazed bowl set into the middle of the composition, two features which give it a slightly more developed and sophisticated appearance.



Fig. 2.47 – Portal blind arch comparison between Nakhchivān (L) and Kemah (R)
© R.McClary

¹⁴⁷ See Bier (2012), pp.258-9 for a detailed description of the interlaced nonagons, hexagons and dodecagons on the tympanum of the Gunbad-i Surkh, along with fig.7 on p.259.

¹⁴⁸ Each facet of the Kemah tomb features a square hole at each side that measures c.13cm x 13cm. They are located at 145cm above current grade, being about the mid height of the facet. The Kırk Kızlar tomb in Niksar has four small rectangular holes in each facet measuring 16cm high x 13cm wide. Their function remains unclear, but they may have been put-log holes for scaffolding in order to repair the roof.

¹⁴⁹ Pancaroğlu (2013), p.42 gives a date of c.1190s CE, while Meinecke (1976), p.188 is more specific, arguing for a construction date of 1191 CE.



Fig. 2.48 – Mengücek Gazi tomb, Kemah (c.586/1190) © R. McClary



Fig. 2.49 – Mengücek Gazi tomb, Kemah; portal arch detail © R. McClary



Fig. 2.50 – Mengücek Gazi tomb, Kemah; portal articulation detail © R. McClary

Although the structure has been extensively restored in the last few years,¹⁵⁰ enough of the original decoration remains in place to allow for an understanding of its relationship with other structures. The use of incised patterns in the mortar of the arch above the door can clearly be related to the techniques used on the earlier Yūsuf ibn Kuthayyir tomb.¹⁵¹ Taken together, all these similarities, along with the connections to details of Ildegüzid tombs in Marāgha, suggest that the craftsman whose name is on the Kemah tomb, ‘Umar ibn Ibrāhīm al-Ṭabarī, was trained within the same milieu as ‘Ajemī ibn Abī Bakr al-Nakhshiwānī. If this was the case, it was most likely within the lands under Ildegüzid control.

¹⁵⁰ The upper section of the tomb shaft above the epigraphic panels, as well as the roof, are almost entirely new.

¹⁵¹ See chapter three, pp.219-229 for a detailed analysis of the spandrel mortar patterns and the connections to Nakhchivān.

Epigraphy

The funerary inscription over the door, executed in baked brick Kufic lettering,¹⁵² features the first part of *āyā* 185 of *sūra* 3 of the Qur'ān¹⁵³ and reads:

كُلِّ نَفْسٍ ذَائِقَةُ الْمَوْتِ

Kullu nafs dhā'iqat al-mawt

Every soul shall have a taste of death



Fig. 2.51 – Kufic epigraphic panel over the door of the Mengücek Gazi tomb, Kemah
© R. McClary



Fig. 2.52 – Yūsuf ibn Kuthayyir tomb, Nakhchivān, dedicatory inscription over the doorway
© R. McClary

The same text can be seen over the entrance of the Round tomb in Marāgha, built in 563/1168.¹⁵⁴ There are two panels of epigraphy on the Kemah tomb that are the only examples in Anatolia carved into plaster panels, rather than being built up with individual bricks, tiles, or being carved into stone. There is one in cursive script in

¹⁵² The panel measures 32cm x 125cm and has damage to the right-hand side. The interior of the panel measures 25cm x 116cm and it is located above what appears to be the original wood lintel.

¹⁵³ The phrase is also a funeral *du'ā'* (supplication), further reinforcing its suitability in a funerary context. Hillenbrand (1994), p.280 suggests that there is no more appropriate quotation in the whole Qur'ān for use on a tomb. Later tombstones in the Ahlat cemetery, dating from the mid-7th/13th century onwards, employ the same phrase. See Rogers (1988), p.116.

¹⁵⁴ See Godard (1936), p.136, fig.93 and p.137, fig.94.

the upper section of the north facet, and a Kufic one in a similar location on the north-east facet. They appear to be unique in the context of Anatolia, but it is a common technique in the Great Saljūq architecture of Iran. The epigraphic panel at the top of the north-east facet (fig. 2.53) has fragmentary remains of the word *‘amal* (work of) followed by the builder’s name that appears to read:¹⁵⁵

عمل عمر ابراهيم الطبري

‘Umar (?) [ibn] Ibrāhīm al-Ṭabarī

His *nisba* indicates that he or his family were from Ṭabaristān, the area of northern Iran that includes the Alborz Mountains and the southern shores of the Caspian Sea.



Fig. 2.53 – Signature panel on the north-east facet of the Mengücek Gazi tomb, Kemah
© R. McClary

The next facet, facing north, has an epigraphic panel of a similar size and location as the signature panel, but is executed in a cursive script (fig. 2.54). There are extensive lacunae, but a suggested reading by Önkāl is:¹⁵⁶

معمار ابن ساي سح المساح سهم الدين [?]

The text as given by Önkāl does not make a great deal of sense but the presence of *ibn* suggests that the first word is a name. Ünal’s earlier reading makes more sense, as he omits the first three words, including the lacunary *mi‘mār* and the *ibn* and gives:¹⁵⁷

شيخ المشايخ سهم الدين

Shaykh al-mashāyikh sahm al-dīn

¹⁵⁵ Önkāl (1996), p.51.

¹⁵⁶ Önkāl, *ibid.* gives a partial, and rather implausible reading, and cites in a footnote an earlier (undated) transcription by Ali Kemal that corresponds somewhat more closely to what remains, but still gives a rather problematic reading that does not reflect much of the surviving text.

¹⁵⁷ Ünal (1968), p.158.

Grand shaykh arrow of religion

Given the nature of the titulature, with the final part being ‘arrow of religion’, it is possible that the panel refers to the patron.¹⁵⁸ Thus the full reading may well be an unidentifiable first name followed by *ibn (?) Shaykh al-mashāyikh sahm al-dīn*.

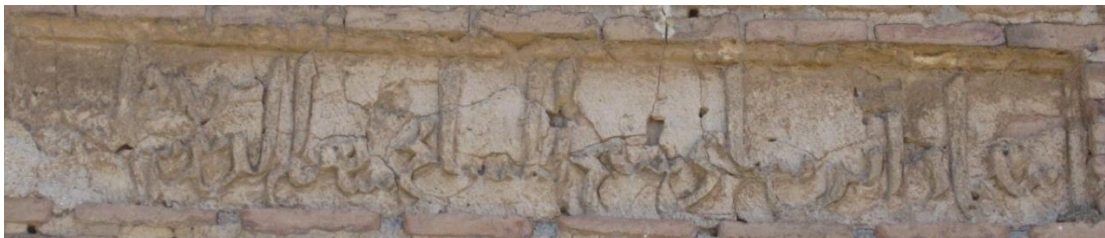


Fig. 2.54 – Epigraphic panel on the north facet of the Mengücek Gazi tomb, Kemah
© R. McClary

There is a wide array of decorative incisions in the rising mortar joints on the exterior of the tomb and on the central octagonal pillar in the crypt, some of which are connected by lines incised into the bed joints.¹⁵⁹ There are several examples of a zoomorphic pattern that may shed some light on the status of the patron. On each side of the door are engaged octagonal pillars that have a checkerboard appearance, alternating between square bricks and square mortar areas. The mortar areas are decorated with what appear to be deeply incised, if somewhat stylized, eagles (fig. 2.55), of a kind seen on a grander scale in Divriği. The prominent use of this long-standing imperial symbol, along with the local folk associations with Malik Ghāzī, suggest that the patron of the tomb may have been a leading Mengüjekid royal, if not a sultan from that dynasty.



Fig. 2.55 – Stylised plaster eagle motif, left engaged column of Mengücek Gazi tomb, Kemah (c. 586/1190) © R. McClary

¹⁵⁸ Ünal, *ibid.*, p.158 suggests it could either be another name of the architect, presumably due to the first word looking a little like *mi'mār*, or the name of the patron, but suggests that it cannot be known either way with any certainty. The latter option appears to be the more likely of the two given the rather grand title.

¹⁵⁹ There are five different mortar patterns on the tomb, all of which are discussed in detail in chapter three, pp.219-227.

The octagonal column supporting a fan vault of the crypt is a rare form in the early funerary architecture of Islamic Anatolia (fig. 2.56), the only other example being in the crypt of the Halifet Gazi tomb in Amasya.¹⁶⁰ The decoration is also very unusual, having the rising joints decorated with repetitions of the same incised pattern all connected by single lines in the horizontal mortar beds. The only other structure in Anatolia to feature such decoration is the ‘Izz al-Dīn Kay Kāwūs hospital in Sivas.¹⁶¹ The use of a central brick column in the vault is another technique that appears to have been transferred directly from the Ildegüzid tombs of Nakhchivān or Marāgha (fig. 2.57). Although the upper portion of the tomb is very similar to the Yūsuf Ibn Kuthayyir tomb, it is the crypts of the larger, decagonal Mu’mina Khātūn tomb (fig. 2.57) and the Gīlān tomb which feature a central column.¹⁶²



Fig. 2.56 – Mengücek Gazi tomb crypt, Kemah (c.586/1190) © R. McClary

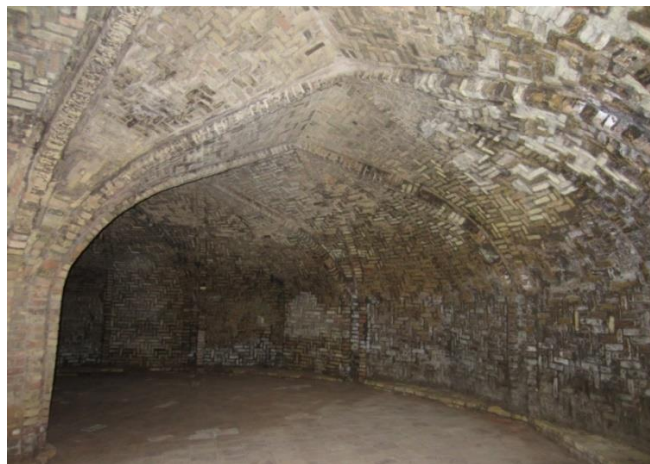


Fig. 2.57 – Mu’mina Khātūn tomb crypt, Nakhchivān (582/1186-7) © R. McClary

¹⁶⁰ See Arik (1967), p.102 and fig.1. Arik dates the Amasya tomb to the mid-6th/12th century.

¹⁶¹ See chapter four, pp.314-322.

¹⁶² Although the Gīlān tomb is square above ground, it has an octagonal subterranean crypt.

Although the upper sections of the Kemah and Niksar tombs have clearly been extensively repaired in recent years,¹⁶³ they both had discontinuous double-shell domes. This was the most common type of roofing system for the tombs of Anatolia, as well as the surviving examples in Nakhchivān (fig. 2.58). It is a structural system that has a number of advantages over single dome systems. It makes possible a more imposing attenuated external appearance and weathering surface, coupled with a separate lower domed internal aesthetic.¹⁶⁴ The use of two thinner shells also allows for a lighter structural mass when compared with an equivalent-sized single dome.¹⁶⁵

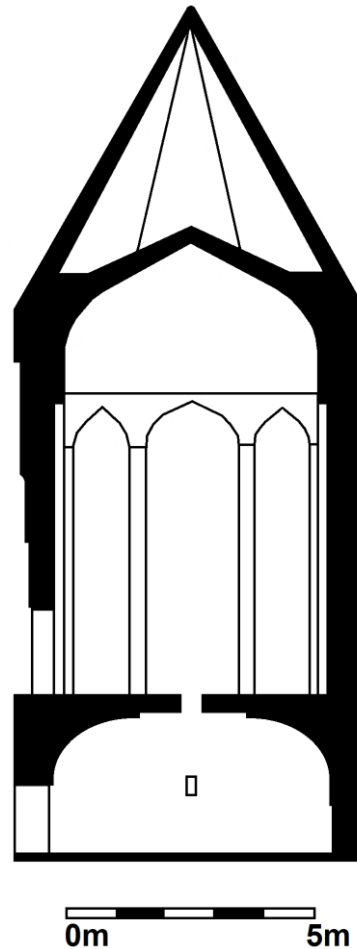


Fig. 2.58 – Yūsuf ibn Kuthayyir tomb, Nakhchivān (557/1162-3), section¹⁶⁶ © R. McClary

¹⁶³ See the upper section of the brickwork of the Kemah tomb in fig. 2.48 and the lower section of the Yūsuf Ibn Kuthayyir tomb in fig. 2.44.

¹⁶⁴ The surviving lower dome inside suggests the original use of a more pointed external one in Kemah, as a shallow external dome was not used in Anatolian tombs of the period.

¹⁶⁵ Ashkan (2010), p.289. Ashkan, *ibid.*, p.290 states that the style is a Saljūq innovation of the 5th/11th century. See *ibid.* for a detailed analysis of the mathematics behind the design of discontinuous double-shell domes, particularly pp.298-303.

¹⁶⁶ Drawing based on measurements made on site and corrected elements of Ashkan (2010), p.205, fig.18.

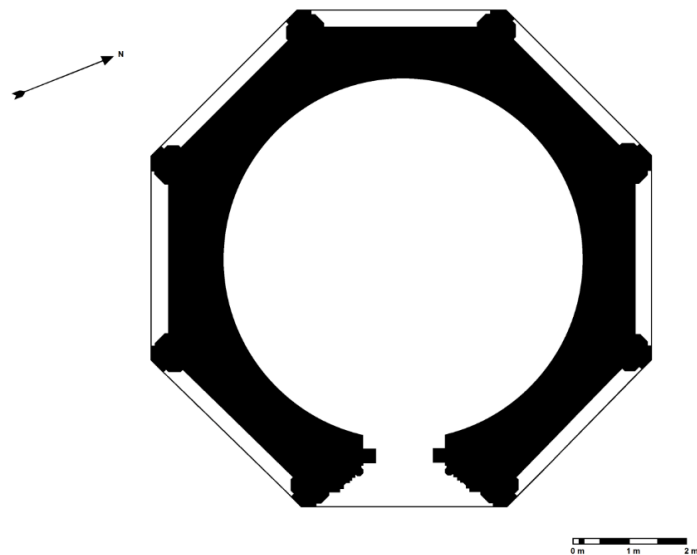


Fig. 2.59 – Mengücek Gazi tomb, Kemah; cross-section @ 135cm above top step of entrance © R. McClary

Kırk Kızlar tomb, Niksar

The small corpus of octagonal brick tombs from the late 6th/12th and early 7th/13th centuries includes the Selim Sultan tomb in Selime, near Aksaray¹⁶⁷ but the closest, in terms of decoration, to the earlier structure in Kemah is the Kırk Kızlar tomb in Niksar. The name, meaning forty daughters in Turkish,¹⁶⁸ gives no indication of the patron and the only epigraphic panel, located over the recessed blind pointed arch in the south-east facet, gives the craftsman's signature (fig. 2.60). Inside a border of rectangular glazed turquoise tiles there is the following text which, although rather unusual in its execution, was almost certainly meant to be read as:

عمل احمد بن ابو بكر المد ... (?)

'amal (work of) *Aḥmad ibn Abū Bakr al-Mad*... (?)¹⁶⁹



Fig. 2.60 – Kırk Kızlar tomb, Niksar; epigraphy on south-east facet © R. McClary

¹⁶⁷ See Appendix 2.1 for a detailed study of the building. Önkal (1996), pp.87-90 provides an overview and plan.

¹⁶⁸ This may be compared with the name of the earlier Chihil Dukhtaran (forty daughters) tomb (446/1054-5) in Damghan, Iran.

¹⁶⁹ The final word actually reads: *al-Mad* [sic] with a *rā'* or *nūn* above the ligature between the *mīm* and the *ḡād*, indicating the true reading to be *al-Marandī*, as indicated in Mayer (1956), p.41. As with signature on the Yūsuf ibn Kuthayyir tomb in Nakhchivān, the *Abī* is written as ابو rather than ابي, which is used on the Mu'mina Khātūn tomb.

The method of execution of the panels, with the epigraphy in low relief, is unique in Anatolia. The panel consists of six rectangular moulded brick tiles that, with the exception of the *kāf* in the middle of *Bakr*, do not split any letter forms. Elements of the decoration as well as the name of the craftsman are almost identical to that of the royal tomb of ‘Izz al-Dīn Kay Kāwūs I in Sivas (617/1220) (fig. 4.67). This may have led to a degree of prestige by proxy for the anonymous patron, if the Niksar tomb post-dates the one in Sivas.¹⁷⁰ Perhaps surprisingly, given the quality of the decoration in Sivas, the epigraphy is rather poorly executed. The last part of the *nisba* is incomplete when compared with the example in Sivas, while the Sivas example does not have the *Abī* that is seen in the Niksar panel. The extensive similarities with the Sivas structure have led to the assumption that the tomb dates from around the same time.¹⁷¹ There is no other firm evidence, such as the results of dendrochronological analysis of timber elements or the presence of a patron’s name, by which to gain a more accurate date.

The structure has been extensively repaired recently, but the new bricks are a different shade of red, making it fairly clear which parts of the structure are original. The tomb is built on a steep slope in the centre of Niksar. The geomorphology of the site obscures the back (north-west) side of the building. The facets of the tomb alternate between blind arch panels and decorated recessed arches over the door and windows, but there are only three decorated panels, as all the ones on the back side are plain. Two of the three recessed panels, over the door and one of the windows, are decorated with different variants of hexagonal-based interlace strapwork patterns, and in both cases the patterns alternate between unglazed and turquoise glazed surface decoration (figs. 2.63 A and B). Both panels have suffered losses as a result of the vicissitudes of time, but the recent restoration appears to have resulted in a change in the chemistry of the structure. Salts are being forced out of the surface of

¹⁷⁰ See chapter four, pp.344-73 for a detailed analysis of the Sivas tomb.

¹⁷¹ Meinecke (1976), p.20-21 suggests a date of 1215 CE, while Mayer (1956), p.41 suggests around 1220 CE.

the bricks, including those in the panel over the door, causing further losses to the bricks, glazed tiles and mortar beds (fig. 2.64).¹⁷²

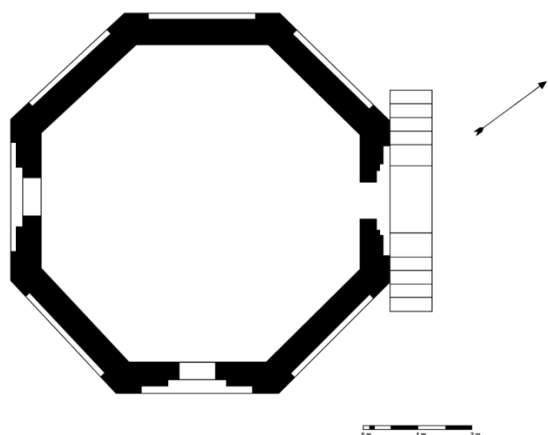


Fig. 2.61 – Kirk Kızlar tomb, Niksar (c.611-17/1215-20); cross-section © R. McClary



Fig. 2.62 – Kirk Kızlar tomb, Niksar (c.611-17/1215-20) © R. McClary

¹⁷² Ashurst and Ashurst (1988), p.2 explain the process of salt migration and the associated surface damage caused by crystallization. Ashurst and Ashurst, *ibid.*, p.72 describe the result of the same process under a glazed surface, called subfluorescence. For more details of the processes involved in the efflorescence and crystallisation of salts on medieval buildings see Arnold and Zehnder (1991), pp.109-120. In particular see p.115, figs. 4-7 for scanning electron microscope images of the types of salt crystals that form on ceramics. Arnold and Zehnder, *ibid.*, p.111 state that salt systems consist of many solutes and that the more soluble ions move further up buildings.



A: Panel above window in SE facet

B: Panel above door in NE facet

Fig. 2.63 – Kırk Kızlar tomb, Niksar; blind arch decoration © R. McClary



Fig. 2.64 – Kırk Kızlar tomb, Niksar; exterior salt efflorescence damage © R. McClary

There are close similarities between the intersecting glazed and unglazed polygon patterns on the Kırk Kızlar tomb and those on the exterior of the Mu'mina Khātūn tomb in Nakhchivān. Although the Ildegüzid structure appears to be the origin of the visual aesthetic, there are differences in the method of execution. Close inspection of the larger areas covered in Nakhchivān shows that they were executed in a different manner. Large (c. 1m square) panels with repeating patterns were prepared on the ground and then installed.¹⁷³ In contrast, at Kemah the glazed and unglazed elements appear to have been set into the plaster bed *in situ*. It appears that an aesthetic developed to the east was used on a smaller scale, and in a slightly different manner, by a craftsman familiar with the earlier Kemah structure, in Niksar.

¹⁷³ The same method, but without the glazed elements, was also employed on the external facets of the earlier Yūsuf ibn Kuthayyir tomb in Nakhchivān (557/1162-3).

Brick octagons: conclusion

Kemah and Niksar represent the westernmost extension of the strain of north-west Iranian tombs that proliferated, increasingly in stone rather than brick, across Anatolia. The Iranian precedent is exemplified by the Yūsuf ibn Kuthayyir tomb (557/1162-3) in Nakhchivān. The two brick Anatolian examples under discussion lack the all-over strapwork decoration on the recessed panels of the facets but they both have smaller panels of strapwork of a similar nature over the door. Although the tombs in Kemah and Niksar have a number of similarities they are by no means identical. The most obvious difference is the rectangular panels in Kemah, in the same manner as the Yūsuf Ibn Kuthayyir tomb, while the Niksar example has blind pointed arches instead. All three, along with structures such as the Bekar Sultan and Selime Sultan tombs, are similar in size as well as in form, elements of decoration and, for the most part, medium of construction.

Regarding the origins of the decoration of the brick tombs, it is to the far east of the Islamic world that attention must turn. Uzgend, in Transoxiana, was the capital of the Farghāna branch of the Qarakhānids in the 5th/11th century.¹⁷⁴ Three tombs survive in the city from that period, one of which is the ruined tomb of Naṣr ibn ‘Alī ibn Mūsā (d.403/1012-13).¹⁷⁵ It features brick strapwork ornament with incised patterns in the stucco bed similar to that found on the two later tombs under discussion here.¹⁷⁶ The decoration of the Naṣr ibn ‘Alī tomb is among the earliest of the surviving examples of a type that was to spread eventually as far west as Kemah and Aksaray in Anatolia.

¹⁷⁴ Bosworth (1996), p183 adds that the Qarakhānids, also known as the Ilek or Ilig Khāns, became Muslim in the mid-4th/10th century, and were a loose federation, closer to their tribal steppe past than the centralised Perso-Muslim state of the Ghaznavids.

¹⁷⁵ Bosworth (1996), p.182. Naṣr ibn ‘Alī was the first of the Qagans in Farghāna. Knobloch (2001), p.164 states that the tomb featured a dome, of which only one corner remains, over a room 26 feet square. See Michailidis (2007), pp.77-82 for a detailed study of the extant literature on the building, including most of the Russian scholarship.

¹⁷⁶ See *ibid.*, pl.59.

Melik Gazi tomb, Pinarbaşı

Although the majority of the Muslim tombs in Anatolia are octagonal, either in brick or stone, there are exceptions. The Melik Gazi tomb in Pinarbaşı is an example of a brick-built square tomb, with an eight-sided drum enclosing an internal dome on squinches (figs. 2.65 and 2.66). The style and the date of related structures in Marāgha suggest that it is unlikely that it was built any earlier than the last quarter of the 6th/12th century and it has been attributed on stylistic grounds to the end of the century.¹⁷⁷ Like the later tomb of ‘Izz al-Dīn Kay Kāwūs I in Sivas (617/1220), which also has a square body and polygonal upper section,¹⁷⁸ the Pinarbaşı tomb is cardinally orientated. Like the Gīlān tomb in Nakhchivān, the tomb is located at the top of a hill in a remote location, in contrast to most of the other surviving tombs that were erected in an urban context. The tomb has engaged columns on the four re-entrant (notched out) corners. Each facet consists of blind arches with narrow tall flanking panels.¹⁷⁹ These each have a shallow brick muqarnas hood near the top and a small rectangular panel above.¹⁸⁰ The tripartite façade with shallow, simple muqarnas is also particularly reminiscent of the Pīr mausoleum in Tākistān (6th/12th century).¹⁸¹ The crypt has a four-iwan plan and central cross vault that is similar to those at the Selime Sultan tomb in Selime near Aksaray (fig. 2.68) and the Quraysh Baba tomb near Afyon.¹⁸²

¹⁷⁷ Önköl (1996), p.234.

¹⁷⁸ See chapter four, p.366-8.

¹⁷⁹ For more details of the tomb see appendix 2.1.

¹⁸⁰ For a detailed analysis of the brick muqarnas see chapter three, pp.176 and 185-7.

¹⁸¹ Daneshvari (1977), p.152 suggests the structure dates from the latter part of the 6th/12th century, rejecting the date of c. 493/1100 given in Hillenbrand (1972), p.53.

¹⁸² See Özgüç and Akok (1954), pp.331-5 for details of the tomb exterior in its pre-restoration state. Plan 1 shows the crypt plan and section, along with the six different decorative brick bonds used on the exterior of the structure.



Fig. 2.65 – Melik Gazi tomb, Pinarbaşı (c. late 6th/12th century) © R. McClary



Fig. 2.66 – Melik Gazi tomb, Pinarbaşı; dome interior © R. McClary

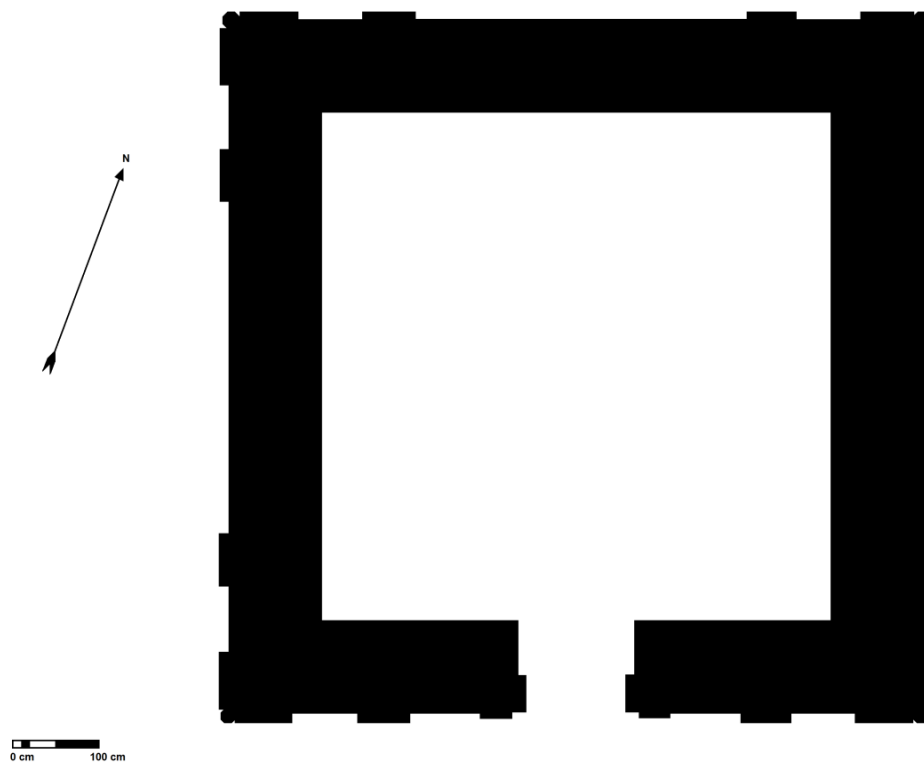


Fig. 2.67 – Melik Gazi tomb, Pınarbaşı; cross-section @ 110cm above current grade
© R. McClary

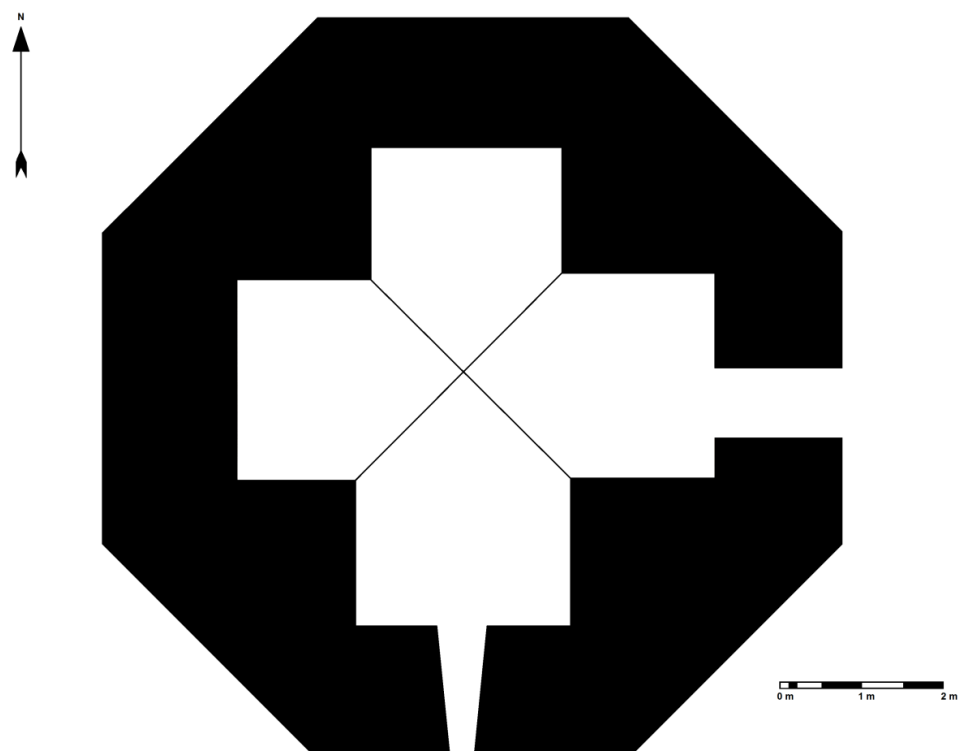


Fig. 2.68 – Selime Sultan tomb, Selime nr. Aksaray (c. early 7th/13th century); crypt plan
© R. McClary

Stone tomb corpus: overview

Overall the surviving stone structures are of a very similar nature, with an octagonal superstructure, small windows, a plain entrance and a steep pointed octahedral roof. Within these basic parameters there are a number of differences which will be examined here.

The facets are predominantly plain, but there are examples with shallow recessed panels that are either arched or rectangular (fig. 2.70). As with the brick tombs, the present appearance of most of the stone structures is somewhat different from when they were constructed. The tomb of Kılıç Arslān II in Konya (c.593/1197) (fig. 2.70 I), signed by Yūsuf ibn ‘Abd al-Ghaffār al-Marghī,¹⁸³ is thought to have had a blue glazed roof at one point.¹⁸⁴ This, along with the band of white on blue glazed tiles depicting the throne verse (Qur’ān 2:255),¹⁸⁵ would make it one of the few examples of stone and glazed tile being combined in the period of study.¹⁸⁶ The Arslān Kutalmış tomb in Niksar has been almost completely rebuilt, with only fragmentary remains of the epigraphic band around the top surviving (fig. 2.70 F). The tombs are mostly free-standing, but one in Atabey (fig. 2.70 L) is attached to the west wall of a madrasa, while the Lala mosque in Kayseri has a tomb attached to the east wall (fig. 2.70 E).

Unlike most of the tombs in Kayseri, the Gevher Nesībe tomb (602/1205-6) (fig. 2.70 I) has a number of unique features. It is integrated into a twin madrasa complex rather than free standing, and features external curvilinear articulation on the facets.¹⁸⁷ These semi-circular projections take up about one third of the width of the each facet and extend up to one course of stone below the top, to allow for the

¹⁸³ Meinecke (1976), Vol. 1, p.188 and Vol. 2, p224. The signature is located over the north-east window.

¹⁸⁴ Redford (1991), p.55. He does not cite a source for the roof having been glazed and it is unclear whether or not the glazed roof was contemporaneous with the tomb's construction, or a later addition.

¹⁸⁵ *Ibid.*, p.56.

¹⁸⁶ The only other surviving examples are in Divriği, on the citadel mosque portal and the Kamededdin tomb.

¹⁸⁷ For a plan of the entire complex, including the tomb, see Gabriel (1934), p.61, fig.36.

epigraphic band. They provide external articulation to the internal niches, one of which is a *mihrāb*.¹⁸⁸

Two of the rather plain black stone tombs in Kayseri, the tomb attached to the Lala mosque and the Emir han tomb, employ white marble spolia as a column dividing the twin barrel arch windows. The one in the Emir han tomb is a small round column (fig. 2.70 A), while the other example is a rectangular block that is decorated with a curvilinear pattern (fig. 2.70 B) on the external face. Both examples represent the conspicuous use of a prestige material on an otherwise plain structure in a decorative rather than structural role.



A:Emir han tomb, Kayseri(c.586/1189) B:Lala mosque tomb, Kayseri (c. early 7th/13thcentury)

Fig. 2.69 – Marble spolia use on tombs in Kayseri © R. McClary

The Mama Khātūn tomb in Tercan is exceptional in a number of ways.¹⁸⁹ It has a ribbed form and a roof in a style more commonly found on Armenian church architecture (fig. 2.70 L). It is also a unicum in regard to its location inside a circular enclosure, as well as the nature of the decoration of the portal that accesses the enclosure, which is discussed above.

¹⁸⁸ See fig. 4.3 for the ground plan of the whole complex.

¹⁸⁹ For a detailed, if rather dated, study of the building see Ünal (1968), pp.129-142.

A number of the tombs are constructed with a combination of brick and stone,¹⁹⁰ including the Quraysh Baba tomb, 25km west of Afyon (c.606/1209-10) which is built of stone, except for the brick roof and inner dome. However, none do so to a greater aesthetic affect than the Ertokuş tomb near Isparta (621/1224). It has *ablaq* stone panels with brick corners and roof¹⁹¹ (fig. 2.70 M). The tomb is accessed from inside the madrasa through a tripartite entrance of a very similar, if less decorative, form to that of the tomb of ‘Izz al-Dīn Kay Kāwūs I.¹⁹² The octagonal tombs which blend brick and stone may be seen as representing the very point of translation and integration of the Iranian and Anatolian modes of architectural expression. With its blend of brick epigraphy and stone body, the Bekar Sultan tomb (fig. 2.70 A) in particular may be singled out as a structure that encapsulates the process of transition from an Iranian to an Anatolian aesthetic.



A: Bekar Sultan, Gülağaç (c. late 6th/12th c.)

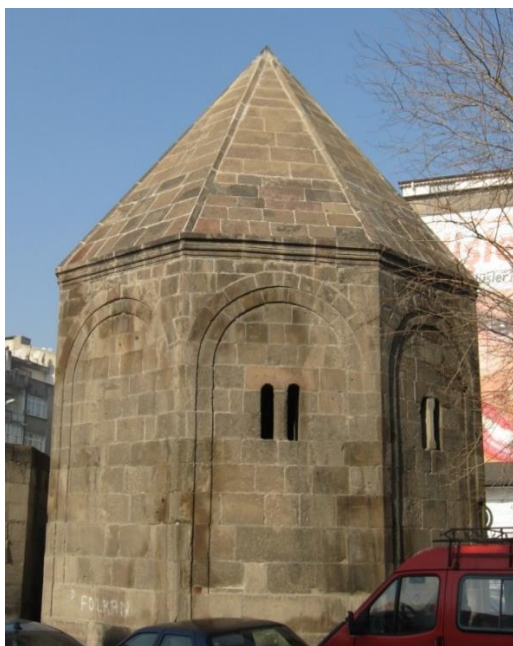


B: Selime Sultan, Selime (c. early 7th/13th c.)

¹⁹⁰ The base and crypt of the Selime Sultan tomb are clearly original, but the use of stone in the recessed panels of the otherwise brick upper section appears to be a result of the recent restoration. See appendix 2.3 for more details.

¹⁹¹ The *ablaq* appearance may be a result of the local Byzantine buildings or the presence of Syrian-trained craftsmen.

¹⁹² See chapter four, pp.373-5 for a more detailed analysis of the relationship between the two structures.



C: Hasbek Kadi tomb, Kayseri (580/1184-5)



D: Emir han, Kayseri (c.589/1189)



E: Lala, Kayseri



F: Arslan Kutalmış, Niksar (575/1179)



G: Halifet Gazi, Amasya (606/1209)



H: Quraysh Baba tomb, nr. Afyon (c.606/1209)



I: Gevher Nesibe tomb, Kayseri (602/1205)



J: Kılıç Arslân II tomb, Konya (593/1197) K: Siddi Zeynep tomb, Battalgazi (early 7th/13th c.)



L: Mama Khâtûn tomb, Tercan (c.596/1200) M: Ertokuş tomb, Atabey (621/1224)

Fig. 2.70 – A selection of the early stone tombs of Anatolia © R. McClary

Conclusion

The aim here has been to demonstrate that the formal elements and initial decorative schemes of tombs were transferred directly from, rather than just influenced by, pre-existing Iranian funerary structures of the latter half of the 6th/12th century. There was only one generation of brick tombs constructed and right from the start the same octagonal forms with pointed roofs were also reproduced in stone. The tenacious indigenous tradition absorbed the form but not the materials of the Iranian style of buildings. By illustrating some of the direct connections to north-west Iran, and Nakhchivān in particular, the sources of the rapidly developing aesthetic can be traced and a clearer picture of what was derivative and what was innovative emerges.

Once the medium changes the decorative repertoire also changes as there is virtually no use of glazed or mortar bed decoration in the lithic tradition of Anatolia. In the later decades of the 7th/13th century, the tombs become increasingly elaborate as the patterns developed for portal decoration were employed on tombs as well.¹⁹³ The signatures indicate that the early tombs are not only built in the Iranian manner but two, in Niksar and Kemah, are known to have been built by individuals who appear, (based in part on their *nisba* as well as the style in which they build) to have come from the region as well. This would indicate, like the name on the citadel mosque in Divriği, that the adoption of the Iranian style and craftsmen connected with that school, added an element of prestige to the building, and thus to the patron as well.¹⁹⁴ The choice of form and decoration was of major significance as it was the tomb, more than any other structure, that was the embodiment of the patron's public image.¹⁹⁵

The most common plan for tombs was octagonal. In addition, many of the minarets feature an octagonal zone of transition from the base to the shaft, and there was a proliferation of octagon-based surface ornaments in brick, glaze, stone and wood. The ubiquitous nature of the octagon for formal and decorative purposes suggests that it may have held a significance that other geometrical shapes did not. Hutt

¹⁹³ Examples include the Döner Kümbet in Kayseri, dated to the last quarter of the 7th/13th century in Kuran (1980), p.88 and shown in *ibid.*, fig.58.

¹⁹⁴ Pancaroğlu (2013), p.33.

¹⁹⁵ As argued in *ibid.*, p.53

discussed the importance of the octagon in Turkish cosmological thought, particularly in early Uyghur Turkish Buddhist texts as well as certain Mahayana texts which refer to an octagonal earth. He goes on to note that in 424/1033 Toghril Beg rebuilt Rayy on an octagonal plan.¹⁹⁶ However, as the perfect intermediary between the circle and the square, it is likely that practical structural considerations were the primary reason for the use of octagonal forms in order to make the transition between the base and the shaft of a minaret.

The overall aesthetic and formal unity of the surviving stone tombs can be seen to have been punctuated with some minor variations and anomalies, such as the Mama Khātūn tomb in Tercan. Although the overall form is clearly derived from the Iranian antecedents, the brief overview above gives a sense of the broader corpus of tombs, in both brick and stone, which were constructed in the period of study. What marks the Anatolian tombs out as unique is the initial fusion of brick and stone, prior to the almost total domination of the lithic medium of construction after the first quarter of the 7th/13th century. The earliest surviving stone tombs are in the former Dānishmendid lands, around Niksar and Kayseri. Their connections to Armenia and Georgia,¹⁹⁷ alongside the presence of indigenous Christian stonemasons, are likely to have been the initial driving force behind Muslim tombs having been predominantly constructed in stone from the 6th/12th century onwards in Anatolia.

¹⁹⁶ Hutt (1974), p.93. He adds that after the conversion of the Turks to Islam, the octagon continued in importance because of its role in Islamic angelology. For an overview of Qur'ānic angelology and its role in Islamic cosmology and cosmography see Nasr (1987), p.97.

¹⁹⁷ Dadoyan (2013), pp.50-51.

City	Name	Date	Location
Niksar	Melik Ahmed Gazi	2 nd ¼ 6 th /12 th c.	Lat: 40° 35' 30" N Lon: 036° 56' 29" E
Gölağaç, Aksaray	Bekar Sultan	c. late 6 th /12 th c.	Lat: 38° 23' 40" N Lon: 034° 22' 54" E
Niksar	Arslān Kutalmış	c.575/1179	Lat: 40° 35' 26" N Lon: 036° 57' 13" E
Kayseri	Hasbek Kadi	580/1184-5	Lat: 38° 43' 22" N Lon: 035° 28' 55" E
Konya	Kılıç Arslān II	c.593/1197	Lat: 37° 52' 25" N Lon: 032° 29' 34" E
Kayseri	Emir Han	c.585/1189	Lat: 38° 43' 02" N Lon: 035° 29' 35" E
Divriği	Sitte Melik	592/1196-7	Lat: 39° 22' 25" N Lon: 038° 07' 09" E
Divriği	Kamereddin	592/1196-7	Lat: 39° 22' 18" N Lon: 038° 07' 11" E
Erzurum	Emir Saltuq	Late 6 th /12 th c	Lat: 39° 54' 15" N Lon: 041° 16' 43" E
Kemah	Mengücek Gazi	c.586/1190	Lat: 39° 36' 30" N Lon: 039° 01' 58" E
Kayseri	Anonymous	c. late 6 th /12 th c.	Lat: 38° 43' 22" N Lon: 035° 28' 55" E
Pınarbaşı, Kayseri	Melik Gazi	c. late 6 th /12 th c.	Lat: 39° 46' 40" N Lon: 040° 23' 11" E
Tercan	Mama Khātūn	c.596/1200	Lat: 39° 46' 40" N Lon: 040° 23' 11" E
Kayseri	Gevher Nesībe	602/1205-6	Lat: 38° 43' 27" N Lon: 035° 29' 04" E
Eskişehir	Ümmühan Khātūn	604/1207-8	Lat: 39° 26' 31" N Lon: 030° 41' 40" E
Sinanpaşa, Afyon	Qureysh Baba	c.606/1209-10	Lat: 38° 45' 47" N Lon: 030° 24' 09" E
Amasya	Halifet Gazi	c.606/1209-10	Lat: 40° 38' 59" N Lon: 035° 49' 24" E
Kayseri	Lala	c. 1 st ¼ 7 th /13 th c	Lat: 38° 42' 57" N Lon: 035° 29' 25" E
Eski Malatya	Siddi Zeynap	c. 1 st ¼ 7 th /13 th c	Lat: 38° 25' 22" N Lon: 038° 21' 49" E
Selime, Aksaray	Selime Sultan	c. 1 st ¼ 7 th /13 th c	Lat: 38° 18' 09" N Lon: 034° 15' 20" E
Niksar	Kırk Kızlar	611-17/1215-20	Lat: 40° 35' 26" N Lon: 036° 57' 13" E
Sivas	'Izz al-Dīn Kay Kāwūs	617/1220	Lat: 39° 44' 53" N Lon: 037° 00' 53" E
Konya	Hodja Fakih	618/1221-2	Lat: 37° 52' 19" N Lon: 032° 27' 59" E
Tokat	Ebu'l Kasim	631/1233-4	Lat: 40° 18' 57" N Lon: 036° 32' 53" E
Atabey, Isparta	Atabey Ertokuş	621/1224	Lat: 37° 57' 05" N Lon: 030° 38' 43" E
Konya	Unfinished marble	c.640/1243	Lat: 39° 44' 53" N Lon: 037° 00' 53" E

Table 2.4 – Tomb corpus and locations

MINARETS

The introduction of minarets to the Saljūq lands of Anatolia in the early 7th/13th century represented a seismic shift in the overall architectural aesthetic, from a primarily horizontal emphasis to a markedly vertical one. This visually projected the presence of both the physical mosque as well as the power of the ruler across the city and into the surrounding landscape. Vertical projection formed part of the wider shift from introversion to extroversion in the Islamic architecture of Anatolia¹⁹⁸ which continued under the later Beylik and Ottoman rulers. Prior to the late 6th/12th and early 7th/13th centuries very few of the Great Mosques or other surviving Islamic structures in Anatolia had monumental portals or minarets. Any decoration was usually reserved for the interior of the building, with the wood *minbar* being the most elaborate element to survive. The initial absence of minarets demonstrates that they were not required for their generally perceived role as a place for the *mu'adhdhin* to perform the *adhān* (call) to *ṣalāt* / *namāz* (prayer),¹⁹⁹ and their subsequent addition indicates they were built to serve a more symbolic role. It is only with the increased Rūm Saljūq hegemony in the late 6th/12th early 7th/13th century that a number of the mosques being built had a minaret included as part of their overall design concept. At the same time existing Great Mosques, such as those built of stone in Sivas and Kayseri, had brick minarets added in order to give them a more distinctively Saljūq appearance. There was a brief flowering of tall minarets under the Rūm Saljūq sultan 'Izz al-Dīn Kay Kāwūs I and their construction may be seen as part of a broader attempt to unify the architectural aesthetic of the expanding sultanate.²⁰⁰

The two earliest brick minarets in Anatolia are stylistically unrelated to the later structures or each other and form part of the eclectic early phase of minaret

¹⁹⁸ Redford (1991), p.71 cites the marble portal added to the north wall of the citadel mosque in Konya by Muḥammad ibn Khalwan for 'Izz al-Dīn Kay Kāwūs. See above, portals section, pp.37-94.

¹⁹⁹ Gabriel (1934), Vol. 1, p.35. The call to prayer was made from the mosque roof in the manner of the earliest days of Islam in Arabia. Schacht (1938), p.51 shows a staircase minaret in Kayseri.

²⁰⁰ Table 2.5 gives the corpus of early minarets in the lands that came to be under Rūm Saljūq domination. The numerous square stone minarets in the Artuqid, Zangid and Ayyūbid ruled south of Anatolia, such as at Diyarbakır, Cizre, Urfa and Harran, as well as the cylindrical stone minaret in Mardin, are not included in this discussion.

construction across Anatolia.²⁰¹ The Tepsi minaret in Erzurum (fig. 2.71), built during the period of Saltuqid rule has a damaged inscription that does not allow for the attribution of a specific year but indicates a mid-6th/12th century date.²⁰² Although the patron, and thus the date, of the Tepsi minaret are unclear, it has been attributed by Leiser to the Saltuqid sultan Ḍiyā' al-Dīn Ghāzī (r. c.518-526/1124-32).²⁰³ The use of minarets as 'landlocked lighthouses' was common in Khurāsān,²⁰⁴ and may have been the primary function of the Tepsi minaret, as it is situated on the south west corner of the citadel and is not attached to a mosque.²⁰⁵ The cylindrical shaft has a far greater taper than any of the other minarets in Anatolia and is of a similar form to the Kalyan minaret in Bukhārā (521/1127),²⁰⁶ and the Qarakhānid minaret in Uzgend, thought to date from the 5th/11th century.²⁰⁷

At the Harput Great Mosque there is no unequivocal proof that the minaret (fig. 2.71) is coeval with the rest of the building. However, its style, crude but with a greater reliance of decorative brick bond in the Iranian manner than later structures, suggests a date close to the mosque date of 561/1166, even if it was added subsequent to the completion of the mosque itself.²⁰⁸ It has a leaning and truncated shaft²⁰⁹ featuring a wider array of brick bonds than later Anatolian minarets, and it is the only one to feature a dodecagonal zone of transition at the base of the shaft. Another unique aspect of the minaret is the location, on the roof of the mosque, on the east wall near the north-east corner.

²⁰¹ What appears to be the earliest minaret in Anatolia, an octagonal structure attached to the Manūchihr mosque in Ani, is stone and was probably built in the late 5th/11th century. There is a fallen structure nearby that was the minaret of the Abū'l-Mu'amran mosque of 595/1198-9 but they are peripheral, both in location and style, to the main corpus. Bloom (2013), p.252 states that the minaret fell in 1890.

²⁰² See figs. 3.8 and 3.9; chapter three, pp.172-3; and appendix 2.4 for a detailed discussion of the Tepsi minaret epigraphy and its possible interpretation in regard to dating the minaret.

²⁰³ See Leiser (1995), p.1001.

²⁰⁴ Hillenbrand (1994), p.155. A light at the top of the minarets would guide caravans travelling at night.

²⁰⁵ The Saltuqid-era citadel mosque is nearby but there is no sense of any architectural or spatial relationship between the two structures. The minaret is integral with the defensive wall and the exterior of the minaret shows no evidence of having ever been attached to another structure. The wooden lantern is a 19th-century Ottoman accretion.

²⁰⁶ Michell (1978), p.260.

²⁰⁷ See Knobloch (2001), fig. 51 and p.164.

²⁰⁸ Sauvaget and Wiet (1937), p.48 has a transcription and translation of the eleven lines of text in rounded Kufic on the mosque that includes the date 561/1166.

²⁰⁹ The lean of the shaft is presumably the result of seismic activity and weakness in the dodecagonal section.



Fig. 2.71 –Tepsi minaret, Erzurum (mid-6th/12th c.) (L) Great Mosque minaret, Harput (561/1166) (R)

The Great Mosque minaret in Sivas: A case study

The minarets built in the latter half of the 6th/12th century are indicative of the early eclectic phase of the development of Islamic architecture in Anatolia. The second phase of minaret construction in the expanding Rūm Saljūq sultanate saw a trend to uniformity and attenuation, with the addition of brick minarets to new and pre-existing Great Mosques. The earliest example may well be the minaret attached to the Great Mosque in Kayseri, but it has been so extensively restored in the modern era that its original state is almost entirely lost. The mosque was built in the 6th/12th century and restored in c. 601/1205,²¹⁰ and it is possible that this is the date of the minaret. Alternatively, it may have been added at around the same time as the

²¹⁰ Schacht (1938), p.51.

similarly-shaped freestanding²¹¹ minaret at the Akşehir Great Mosque, dated 609/1213²¹² (fig. 2.72) during the early years of the rule of ‘Izz al-Dīn Kay Kāwūs I.

The study of Rūm Saljūq minarets is primarily the study of brick structures, and the finest example of the form in Anatolia is no exception. What follows is a detailed case study of one minaret in order to provide the fullest examination possible and it can act as a guide for the rest of the corpus.²¹³ The minaret at the east end of the *qibla* wall of the stone-built Great Mosque in Sivas was added to the pre-existing mosque structure in 609/1212-1213.²¹⁴ It is unusual in both its location, on the *qibla* wall,²¹⁵ and the fact that, unlike most of the other monumental minarets of the period attached to Great Mosques, it does not have a square base topped by an octagonal section supporting a cylindrical shaft. Instead it features an octagonal base supporting the cylindrical shaft (figs. 2.72 and 2.74). Regarding antecedent brick structures, the Gulpāyagān minaret in Iran (c. 493/1100)²¹⁶ appears to be the earliest extant minaret to use an integrated octagonal base and transition zone with blind pointed arches in the facets.²¹⁷

The minarets of northern Mesopotamia are geographically and chronologically closer to the minarets of eastern and central Anatolia than most of the surviving Iranian antecedent structures to which they can be stylistically related. The Daqūq (Ta’ūq)

²¹¹ Meinecke (1976), Vol. 2, p.24 shows that the minaret was originally attached to the north-east corner of the prayer hall, prior to the reworking of the north wall of the mosque in order to create a courtyard in the latter half of the 8th/14th century.

²¹² *Ibid.*, p.24. The epigraphy on the base of the minaret names Abū Sa‘īd ibn Ibrahīm ibn al-Ḥajj Najm al-Dīn Najīb ibn Abī al-Mu‘ammar al-Ḥayrāṭ. For more details of the minaret see appendix 2.6.

²¹³ Detailed analysis of the other surviving minarets of the period can be found in Appendix 2.

²¹⁴ *Ibid.*, p.427. The date is based on an epigraphic panel, accession #1120, now held in the Arkeoloji Müzesi in Sivas. Although the inscription refers to a restoration and does not specifically refer to the minaret, the mosque was possibly only about fifteen years old at the time and there is a scholarly consensus that this is the date of the minaret.

²¹⁵ The only other minaret of the period attached to the *qibla* wall is the Gūdūk Minare mosque minaret (623/1226) in Akşehir. The majority of minarets are attached to the north-east or north-east corner of mosques, or on occasion, such as at the Great Mosque in Akşehir, are freestanding.

²¹⁶ Pope (1981), pl.361 B.

²¹⁷ Hutt (1974), pp.241-242 discusses the epigraphy on the base of the Gulpāyagān minaret that is also a form of tripartite epigraphy. See *ibid.*, pp.96-108 for an (occasionally speculative) analysis of the possible Tibetan and Chinese, but primarily Indian, origins of the form of the Iranian type of minaret which subsequently came to be employed across Anatolia in the 7th/13th century. The Gulpāyagān Friday Mosque also features tripartite knotted epigraphy, above the *mihrāb* and on the south-east interior wall. See Pope (1938), Vol.3, pl.308.

minaret in northern Mesopotamia has the same basic form, although nothing like the level of glazed decoration,²¹⁸ as the Sivas Great Mosque minaret. Although the date of the Daqūq minaret is unclear, it is similar in style to the Great Mosque minaret built in Erbil in 586/1190.²¹⁹ There is no evidence of any direct connection between the two structures, but the formal similarity demonstrates that the diffusion of Iranian style brick minarets extended into Mesopotamia as well the Rūm Saljūq sultanate in the late 6th/12th and early 7th/13th centuries.



Fig. 2.72 – Great Mosque minaret, Sivas (L) Great Mosque minaret, Akşehir (R)

²¹⁸ For a pre-restoration image of the minaret see the photograph taken by Gertrude Bell in March 1911, available at: www.gerty.ncl.ac.uk/images/Q_193.jpg

²¹⁹ See Janabi (1982), pl.15 for an image of the Daqūq minaret prior to restoration.

Base

The entrance is in the north, from inside the prayer hall. The Sivas minaret shaft sits on an octagonal base with five full, and one partial, facets visible (fig. 2.80), and only four of the facets have recessed blind pointed arches²²⁰ (figs. 2.73 to 2.75) with the brick spandrel decorations being different on each facet. The recess profile (fig. 2.74) and the patterns are similar to those of the Kırk Kızlar tomb in Niksar (c.1215-1220 CE) and the tomb of ‘Izz al-Din Kay Kāwūs I (617/1220), both of which state that they are the work of (‘amal) Aḥmad ibn Abī Bakr al-Marandī.²²¹ Along with the spandrel decoration, the use of rectangular panels over the blind arches featuring turquoise glazed Kufic epigraphy is also common to the three structures. These are all motifs which are not encountered on other structures of the period.²²² They can be related to the architecture of north-west Iran, in particular to structures such as the Gunbad-i Kabūd in Marāgha and the Mu’mina Khātūn tomb in Nakhchivān.²²³ All but one of the early minarets of Anatolia are unsigned by either architects or craftsmen, the exception being the Gūdük Minare mosque in Akşehir.²²⁴ Stylistic analysis of the two tombs in Niksar and Sivas,²²⁵ which appear to be signed by the same builder, supports the attribution of the Great Mosque minaret in Sivas to Aḥmad ibn Abū Bakr al-Marandī, or craftsmen who trained with him, as well.

²²⁰ The east, south-east, south and south-west ones.

²²¹ Mayer (1956), p.41. Meinecke (1976), Vol. 1, pp.20-21 suggests a date of 1215 for the Niksar tomb and notes the similarity between its tile work and that of the Sivas minaret.

²²² There is the later Ebul Kasım tomb built in Tokat in 631/1233-4. Meinecke (1976), Vol. 2, p.461 suggests, based on stylistic analysis, that it is also the work of Aḥmad.

²²³ For a closer analysis of the connections to both north-west Iran and Ghūrīd Khurāsān see chapter four.

²²⁴ Meinecke (1976), Vol. 2, p.32 states that the inscription panel over the door names the builder of the Gūdük Minare mosque (623/1226), as Aḥmad ibn Mas‘ūd.

²²⁵ See chapter four, pp.344-375 for a detailed analysis of the ‘Izz al-Dīn tomb in Sivas.

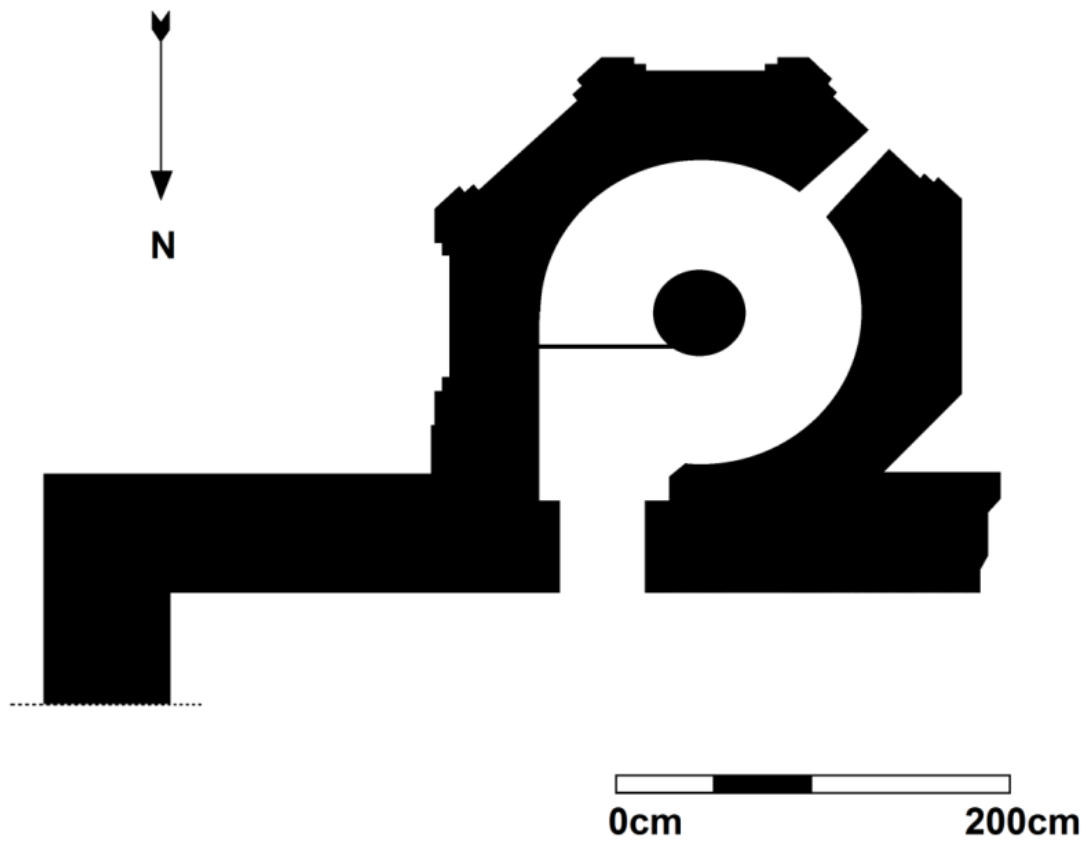


Fig. 2.73 – Great Mosque minaret, Sivas (609/1212-13); base cross-section²²⁶

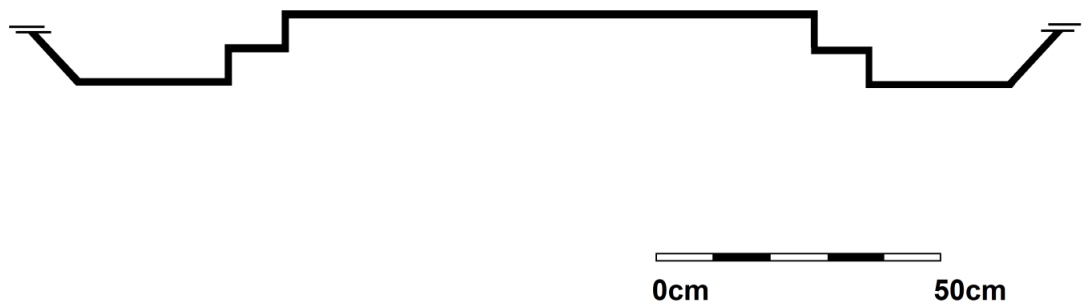


Fig. 2.74 – Great Mosque minaret, Sivas; base south-east facet cross-section © R. McClary

²²⁶ Based on direct measurements and elements of Başar (2006), p.436.



Fig. 2.75 – Great Mosque minaret, Sivas (609/1212-13); base © R. McClary

Shaft

The tall shaft of the minaret has a slight taper, an average height to width ratio of 6:1²²⁷ and an internal helix staircase with 114 steps.²²⁸ Losses to the upper epigraphic band and a large section of the west side of the shaft have revealed the underlying structure of the shaft. The neatly spaced brick bond consists of narrow mortar bed joints and wide rising mortar joints on the exterior. It is a decorative brick skin that has been mortared to the rough and irregular brickwork of the inner core of the shaft (fig. 2.76).

The decoration on the shaft consists of two large epigraphic bands, one around the middle and one at the top. The upper one has lost almost all the brick lettering²²⁹ and much of the mortar bed in which they were set but the lower band retains enough to get some sense of the meaning. The upper band has guard bands on the top and

²²⁷ The ratio is not consistent, as the top of the shaft is 14% narrower than the base of the shaft.

²²⁸ Başar (2006), p.429.

²²⁹ A small portion of the upper register survives in the north-east section of the band.

bottom that consist of a single row of green glazed bowls set into mortar.²³⁰ This is a more common method than much of the rest of the decoration of the minaret, having also been used in the guard bands above and below the inscription band around the Bekar Sultan tomb in Gülağaç near Aksaray,²³¹ and on the entrance façade of the Mengücek Gazi tomb at Kemah (c. 586/1190). As well as the epigraphy in Sivas, Nakhchivān and Marāgha having a similar form to that of the style seen on earlier Ghūrīd architecture, there is also a similarity in the decoration of the narrow guard bands above and below the band of epigraphy in the middle of the Sivas shaft. An example is the very similar knotted motif found on either side of the epigraphic band around the Herāt Friday mosque portal built in 597/1201.²³²



Fig. 2.76 – Great Mosque minaret, Sivas (609/1212-13); upper section of shaft showing decorative outer bond and irregular core © R. McClary

Epigraphy

It appears that there was an unprecedented number of inscriptions on the minaret, with six separate inscriptions, of which two are completely lost, two have very extensive lacunae and only one is entirely clear in its meaning. Of the four original

²³⁰ The same decorative motif can be seen in a band below the roof of the earlier stone-built Kamedreddin tomb (592/1196-7), in Divriği.

²³¹ The tomb is located at Lat: 38° 23' 40" N Lon: 034° 22' 54" E. See appendix 2.1 for more details. Later the same motif of a band of green inset bowls is employed below the band balcony muqarnas at the Kesik Minare mosque minaret in Aksaray as well.

²³² Hillenbrand (2002), p.127.

panels of turquoise glazed tile epigraphy above the blind arches on the base, three are partially intact and one is missing (fig. 2.75). Of the two monumental bands of tripartite²³³ baked brick Kufic epigraphy, the one around the middle of the shaft has extensive losses but enough remains to determine a few key words (fig. 2.80). It has been argued by Hutt that the use of epigraphy on a minaret allows it to silently proclaim the word of God even when the *adhān* is not being given.²³⁴ The effect was beautifully described by Robert Byron when he wrote;

*“Kufic lettering has a functional beauty; regarded as pure design, its extraordinary emphasis seems in itself a form of oratory, a transposition of speech from the auditory to the visible”.*²³⁵

The panel of glazed tile epigraphy on the east facet of the base (fig. 2.77)²³⁶ consists of the last part of *āya* 16 of *sūra* 40, *Ghāfir* (the Forgiver). It is a Meccan *sūra* that deals with Allāh being the forgiver yet severe in punishment.²³⁷ The verse in question refers to the day of judgement, and the portion displayed reads:

الملك لله الواحد القهار

al-mulk li'llāh al-wāḥid al-qahhār

*Who has control? God, the One, the All Powerful”.*²³⁸



Fig. 2.77 – Great Mosque minaret, Sivas (609/1212-13); base east facet epigraphy
© R. McClary

²³³ The epigraphy is divided into three horizontal registers, with lettering on the bottom, knotted *hastae* in the middle and an upper register of extended *hastae* with addorsed half-arrow tip heads.

²³⁴ Hutt (1974), p.159

²³⁵ Byron (1981), p.271. He was referring to the tomb of Maḥmūd in Ghazna but the sentiment is also applicable to the use of Kufic epigraphy on minarets.

²³⁶ The three surviving panels measure 345mm x 1030mm.

²³⁷ Abdel Haleem (2004), p.301.

²³⁸ *Ibid.*, p.302. The translation is very free, as the Qur'ānic text does not take the form of a question. The epigraphy omits the word *al-yawma* (اليوم) meaning today (see Wehr (1966), p.1110) from between *al-mulk* and *li'llāh*, which is present in *āya* 16 of *sūra* 40 in the Qur'ān.

This epigraphy emphasises God's qualities of wrath and majesty, rather than those of mercy and beauty. It was a fitting choice for a minaret erected in a city located in a region on the frontier of the Islamic world, that was undergoing a period of expansion under 'Izz al-Dīn Kay Kāwūs I in the second decade of the 7th/13th century. The same portion of 40:16 can be found in Kufic letters, but on a vegetal background and carved in stone over the entrance of the Saltuqid Mama Khātūn tomb enclosure portal in Tercan (c.596/1200).²³⁹ The south east panel of the Sivas minaret base (fig. 2.78) has some lacunae, and an unusual interlacing oval form around the *hastae* of the final two letters. The final part is unclear, but the text may read:

العظم (?) الله ... (?)

Al-‘aẓam (?) Allāh... (?)

*The greatness (?) Allāh ... (?)*²⁴⁰



Fig. 2.78 – Great Mosque minaret, Sivas (609/1212-13); base south-east facet epigraphy
© R.McClary

²³⁹ Ünal (1968), p.141 states that it is a text that is commonly found on tombs, but makes no mention of its use on minarets. The same text features near the top of the ten facets of the Mu'mina Khātūn tomb in Nakhchivān.

²⁴⁰ An alternate reading is *Al-‘aẓamat [li'l-] llah* (Majesty belongs to God).

The south panel has very few fragments of letter forms remaining, with a *kāf* being the only one that is clearly identifiable. As a result it has eluded any meaningful translation (fig. 2.79). Unlike the other two panels, the turquoise framing tiles, although encrusted with dirt, can be seen to feature deep blue underglaze patterns as well. They are also much shorter pieces of tile than the ones around the other panels (fig. 2.83). It is not clear if they are slightly later replacements due to damage, or if they were contemporary with the rest. The patterns and colours are very similar to a number of tiles used on royal palaces, such as the ones from the slightly later Aspendos palace,²⁴¹ now on display in the Antalya Museum (fig. 2.82). If the two-tone tiles are contemporary with the rest of the monochrome tiles they represent one of the earliest surviving examples in Anatolia. The style of the epigraphy in the three panels, as well as the glazed nature of the lettering is very similar to that of the epigraphy on the façade of the nearby ‘Izz al-Dīn Kay Kāwūs I tomb.²⁴²



Fig. 2.79 – Great Mosque minaret, Sivas (609/1212-13); base south facet © R.McClary

²⁴¹ Redford (1993), p.151 states that the Roman theatre, built in the 2nd century CE was converted to a palace by the Rūm Saljūqs. The work was done during the reign of ‘Alā’ al-Dīn (r. 616-37/1219-37).

²⁴² See chapter four, pp.351-360.



Fig. 2.80 – Great Mosque minaret, Sivas (609/1212-13); base SW facet spandrels
© R. McClary



Fig. 2.81 – Great Mosque minaret, Sivas (609/1212-13); upper border of south facing
epigraphic panel © R. McClary



Fig. 2.82 – Aspendos palace glazed tile (616-35/1219-37); now in Antalya Museum
© R. McClary

There is extensive use of knotted and elongated *alif* and *lām* in the Ghūrid-style tripartite Kufic epigraphic band around the middle of the shaft (figs. 2.83, 2.84 and 2.85). The knotted patterns and the addorsed half arrowhead treatment of the top of the *hastae* are very similar to the design of the Kufic panels above the door and two windows of the nearby tomb of ‘Izz al-Dīn Kay Kāwūs I.²⁴³ There is a complex array of knotted patterns employed in the band and none of the surviving examples repeat (fig. 2.84). This virtuoso display of tripartite knotted Kufic epigraphy can be compared with the Ghūrid Shāh-i Mashhad madrasa in north-west Afghanistan which dates from 561/1165-66.²⁴⁴ Although the decoration is in terracotta rather than brick, the Shāh-i Mashhad portal inscription also does not repeat any of the numerous and complex knotting patterns employed in the epigraphy.²⁴⁵ The stylistic similarities suggest a strong possibility of the presence of craftsmen who had previously worked in Khurāsān. In addition to the aforementioned Ghūrid example, a section of wall painting from the second palace in the citadel at the Bānījūrid²⁴⁶ capital, at Hulbuk in Tajikistan (dated to the second half/end of the 4th/10th to first half of the 5th/11th century) features extensive knotting and tripartite form and foliated Kufic lettering. If it is contemporary with the palace and not a later addition, it represents one of the earliest surviving examples of this form of epigraphy.²⁴⁷

The unique nature of the scale, quality and style of the Sivas minaret inscription in the context of the Rūm Saljūq architecture of Anatolia²⁴⁸ indicates the expense of the project and prestige of the patron and adds further weight to the argument that it was,

²⁴³ Another close parallel to the form of the Sivas minaret shaft epigraphy, but on a much smaller scale and in a different material, can be found on the middle band of the famous Ghūrid “Bobrinsky Bucket” made in Herāt in 558/1163 and now in the Hermitage Museum, St. Petersburg, Russia (IR-2268). Elements of knotting can also be seen on the brick band of epigraphy at the top of the Yūsuf ibn Kuthayyir tomb in Nakhchivān.

²⁴⁴ Kasimir and Glatzer (1971), p.56 states that the madrasa is dated by epigraphy. Knobloch (2001), p.228 notes that the structure was completely destroyed during the civil war that followed the Soviet withdrawal from Afghanistan.

²⁴⁵ See Casimir and Glatzer (1971), figs.8-11. Hillenbrand (2000), p.187 calls the epigraphy “unrivalled”.

²⁴⁶ For more details on the dynasty see Bosworth (1996), p.174.

²⁴⁷ Siméon (2012), pp.406-7. The epigraphy, described by Siméon as “truly exceptional”, is white and yellow on a turquoise background, delineated with fine black lines. Siméon, *ibid.*, p.409, fig.21b has a drawing of the epigraphy.

²⁴⁸ A much more crude imitation of the style of epigraphy at Sivas is employed in a band around the top of the octagonal Bekar Sultan tomb in Gülağaç near Aksaray. For more details see appendix 2.1.

along with the other monumental brick minarets added to Great Mosques in the early 7th/13th century, a sultanic foundation.

Moving up to the next level, the band of epigraphy around the middle of the shaft has suffered extensive losses which make the text very hard to read, but a few words can be understood that give a sense of the meaning of the whole inscription (fig. 2.83). The references to *al-mulk* and *Allāh* indicate that, like the inscription on the east face of the base, it refers to the power and dominion of God.²⁴⁹ The high location and the extensive knotting mean that even when complete the two bands would have been difficult to decipher, but it has been argued that the size and location of writing, almost regardless of content, was indicative of authority and sovereignty.²⁵⁰ The little that can be read on the Sivas minaret appears to support this idea.

The epigraphy is primarily in baked brick, but one knotted section, in the north-east section of the band (fig. 2.84) is in glazed turquoise and may represent the starting point of the inscription, although the inscription is too fragmentary to determine that with any certainty. The epigraphic message, only understandable primarily to believers, reinforces the physical presence and visual power of the form of the minaret which projects the image of a powerful dynasty that has God on its side. Given the few words that are discernible, and Blair's observation that interlacing was more popular for pious or Qur'ānic quotes because the interlacing interfered with legibility,²⁵¹ it seems unlikely that the surviving band in Sivas was titular in nature. The lack of any surviving words in the upper band makes it impossible to be sure of the text in that case. Earlier examples of epigraphic bands on minarets in Afghanistan featuring titlature, such as the minaret of Bahrāmshāh in Ghazni (6th/12th century),²⁵² suggests that such content was at least possible.

The Sivas minaret, along with the ones in Kayseri and Akşehir, represents an overtly Iranian Great Saljūq, vertical brick aesthetic. It appears to have been consciously introduced to the horizontal lithic aesthetic of the cities of Anatolia in the early years

²⁴⁹ This interpretation of the epigraphy may be augmented by the presence of the word *al-ālam* (the world) if the reading is correct.

²⁵⁰ Grabar (1992), p.110 refers to the bands of epigraphy on the Quṭb Minār in Delhi, but the epigraphy on the Sivas minaret is similar enough that the point remains valid.

²⁵¹ Blair (1998), p.62. She adds that inscription bands at the top of minarets were meant to be read, or at least recognised.

²⁵² See Sourdél-Thomine (1953), p.116 and p.115, fig.1.

of the 7th/13th century which had, in several cases, been under Dānīshmīdīd control until the last quarter of the 6th/12th century. Given the frontier nature of the Rūm Saljūq sultanate, the visibility of the minaret as a result of its attenuated form, and the message of Muslim power and control in the epigraphy, a comparison may be made with contemporary structures nearer the eastern frontier of the *dār al-Islām* such as the Jam minaret in Afghanistan and in particular the Quṭb Minār in Delhi.²⁵³

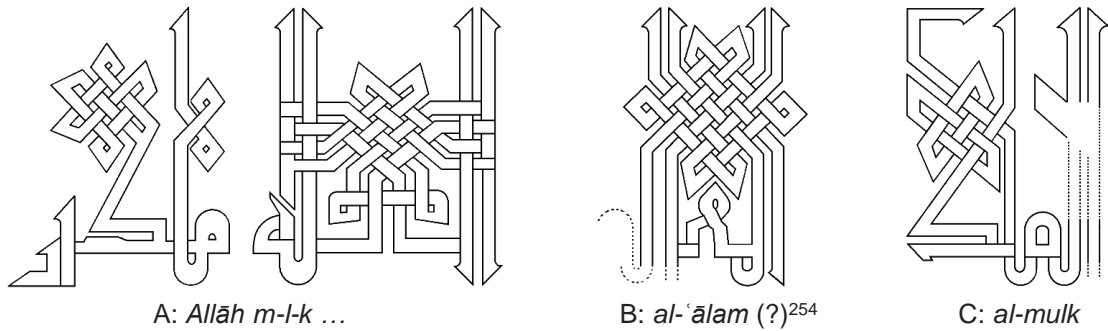


Fig. 2.83 – Great Mosque minaret, Sivas; Epigraphic band drawings © R. McClary



Fig. 2.84 – Great Mosque minaret, Sivas; glazed and baked brick epigraphic band around middle of shaft (starts and ends at west) © R. McClary



Fig. 2.85 – Great Mosque minaret, Sivas; south face of epigraphic band © R. McClary

²⁵³ Hillenbrand (2007), p.163 connects the Rūm Saljūq use of Arabic epigraphy directed at a non-Muslim audience, to the Afghan and Indian examples to the east.

²⁵⁴ As the final part of the word is missing, it is possible that the original reading was *al-‘ālamīn*.



A: Quwwat al-Islām mosque (626/1229) B: Shams al-Dīn Iltutmish tomb (c.632/1235)

Fig. 2.86 – Knotted Kufic epigraphy in Delhi © R. McClary

The use of the knotted tripartite epigraphy can also be found on the eastern frontier of the Muslim world. The northern extension of the *qibla* wall of the Quwwat al-Islām mosque in Delhi (626/1229)²⁵⁵ has two variants of knotted Kufic, as does the nearby Iltutmish tomb (c.632/1235).²⁵⁶ The examples closest to the style used in Sivas are located in a panel that features the *shahāda*, above a secondary *mihrāb* (fig. 2.86 A) and in a band around the upper interior of the tomb (fig. 2.86 B). Like almost all of the Islamic architecture of the Indian subcontinent, the panels are executed in stone.²⁵⁷ It is the use of the motif on the furthest reaches of the Islamic world, but not in many other regions in between, that suggests an intriguing, but poorly understood connection between the Islamic architecture of Anatolia, and that of the lands of the late and post-Ghūrīd empire to the east. This topic awaits exploration by future scholarship.

Muqarnas

The use of brick muqarnas projections to support the balcony of a minaret is a technique first employed on cylindrical minarets in Iran in the latter part of the 5th/11th century, an early example being the Pa Minār mosque minaret in Zavāreh (461/1068-9).²⁵⁸ The upper section of the Sivas minaret shaft has one band of muqarnas cells and three increasingly larger bands of V-projections. Each of these bands consists of five courses of brick. The muqarnas cells alternate between wide and narrow, with all twenty-four cells having a triangular plan (fig. 2.90). The form of the wider cells is very similar to the ones on the Gunbad-i Kabūd in Marāgha.²⁵⁹ The V-plan created by the muqarnas is given added complexity by the addition of an

²⁵⁵ Michell (1978), p.267. The extension was added by Shams ad-Dīn Iltutmish.

²⁵⁶ *Ibid.*, p.267.

²⁵⁷ There are a number of early brick tombs that survive in southern Pakistan. For an overview see Edwards (2006), pp.18-29.

²⁵⁸ Hutt and Harrow (1977), p.81, pl.25.

²⁵⁹ See Hillenbrand (1975), fig.6.

extra set of V-shaped projecting bricks between each cell. The purpose of this motif is to narrow the gap which the bricks forming the circular platform above have to span. The faces of the muqarnas cells are decorated with irregularly alternating turquoise glazed strapwork or unglazed geometric patterns (fig. 2.89). Although many of the geometric compositions decorating the cells are constructed from triangular components, (figs. 2.88 A, B and C) the more complex pattern, consisting of kite-shaped elements, was designed using a triangle-based grid. It consists of six subdivided triangles arranged to form a hexagon, with the bottom half of the bottom two triangles missing from the final composition (fig. 2.88 G).

There are at least eight different unglazed patterns, as well as a ninth which features fragmentary traces of glaze. There are three turquoise glazed strapwork patterns used, two of which are employed on the narrow cells, to make twelve patterns in total. The most intact glazed design is illustrated in fig. 2.88 E. None of the unglazed brick patterns appear to be repeated, however several cells are missing entirely or are too fragmentary to determine the nature of their patterns.

These losses do however reveal the method of construction. In contrast to the rest of the surviving brick muqarnas of the period in Anatolia, the forms of the Sivas minaret muqarnas cells are constructed entirely with mortar rather than bricks bonded together with mortar. The edges of the cells were then delineated with small square bricks and the bottom with thin rectangular bricks. The sides of the upper projecting elements are reinforced with larger bricks to support the V-shaped projections above. There is no visible evidence of internal timber reinforcement, as seen at the Kılıç Arslān II kiosk brackets in Konya,²⁶⁰ but there is a band of circular holes at the top of the shaft. These were used as putlog holes for the scaffolding required for the construction of the muqarnas,²⁶¹ and they remain as voids in order to provide ventilation for the minaret shaft.

²⁶⁰ See chapter three, pp.177-180.

²⁶¹ There are square holes in the same location on the later Eğri minaret in Aksaray. For more information see chapter three, pp.182-184 and appendix 2.9. Janabi (1982), p.204 states that the coeval Qumriyya mosque in Baghdad also has the same feature for the use of scaffolding.

The patterns, both glazed and unglazed, which are employed on the muqarnas and the rest of the minaret are very similar to those seen at the nearby ‘Izz al-Dīn Kay Kāwūs I hospital, in the north iwan niches and the ‘Izz al-Dīn tomb. Above the west window of the tomb façade are two cartouches that have the name of Aḥmad ibn Abī Bakr al-Marandī, and the distinctive nature of the patterns and epigraphy on the tomb, the north iwan muqarnas niches and the Great Mosque minaret, point towards the same group of craftsmen, possibly under the direction of Aḥmad, being responsible for all three.²⁶²

A probable precedent for the style of the glazed decoration of the muqarnas cells is the muqarnas cells of the upper niches on the exterior of the Mu’mina Khātūn tomb in Nakhchivān (582/1186). The upper two of the three tiers of cells all feature a pattern very similar to the one in fig. 2.88 E but it is the border rather than the pattern itself that is executed in glazed tile (fig. 2.87). In addition, the outer brick form of the cells is similar in each case. The similarity between elements of the tomb in Nakhchivān and the decoration of buildings in Anatolia attributed to or featuring the signature of Aḥmad ibn Abī Bakr al-Marandī, suggests that he may well have trained under, or within the same milieu, as the architect whose name is on the tomb, ‘Ajamī ibn Abī Bakr al-Nakhshiwānī.²⁶³

²⁶² Meinecke (1976), Vol. 2, p.461 also suggests, based on stylistic analysis, that the minaret is the work of Aḥmad ibn Abī Bakr al-Marandī. See chapter four for a detailed analysis of the decoration of the nearby ‘Izz al-Dīn Kay Kāwūs I hospital and tomb complex.

²⁶³ See the decoration of the facets of the Kırk Kızlar tomb in Niksar and the north iwan niches of the hospital in Sivas. The chronology suggests that ‘Ajamī would have been at the end of his career when Aḥmad was starting out, but the numerous similarities suggest something more than Aḥmad having just observed the Nakhchivān tombs.



Fig. 2.87 – Nakhchivān (L) and Sivas (R) muqarnas cell form and decoration © R. McClary

The plans of the balconies of the Sivas and the later Eğri minaret in Aksaray are both stellate. It may be the case that there is a link to the stellate plans of eastern minarets such as the Ghaznavid minaret of Mas‘ūd III at Ghazni (492-508/1099-1115)²⁶⁴ and the Ghūrid Quṭb Minār at Delhi, the lower section of which was completed by 598/1202.²⁶⁵ Although elements of the balcony are reminiscent of the earlier Sārabān minaret in Iṣfahān, Iran,²⁶⁶ the use of saw-tooth patterns above the muqarnas demonstrates the hybridity so typical of the architecture of the period in Anatolia.

²⁶⁴ Bosworth (1996), p.296.

²⁶⁵ Pinder-Wilson (2001), pp.172-173 suggests that the form is derived from stellate-planned tomb towers such as the Gunbad-i Qābūs in Iran (397/1006).

²⁶⁶ See Pope (1981), Vol. VIII, pls.362 B and 366. The cells are simpler than the ones in Sivas, and the minaret has a smaller diameter. Pope suggests the structure dates from the late 6th/12th century. Hutt (1974), p.147 describes the Sārabān muqarnas as the finest in existence.

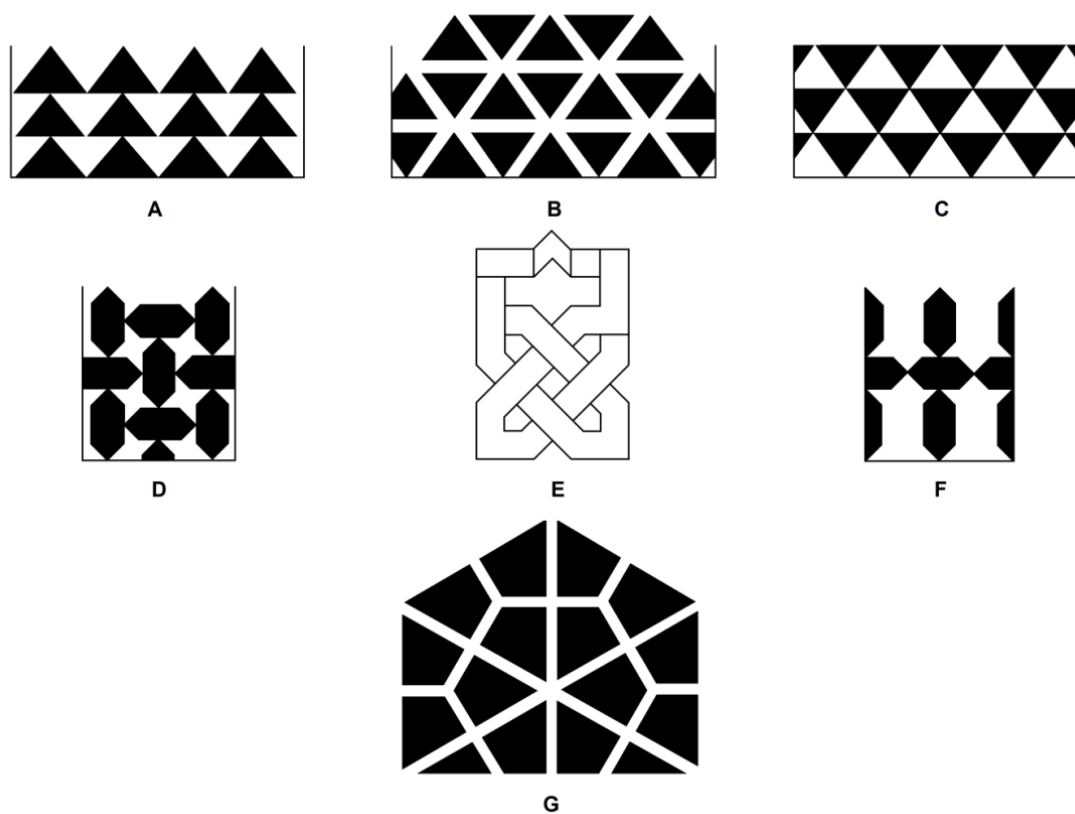


Fig. 2.88 – Great Mosque minaret, Sivas; muqarnas patterns (flat section of cells)
© R. McClary

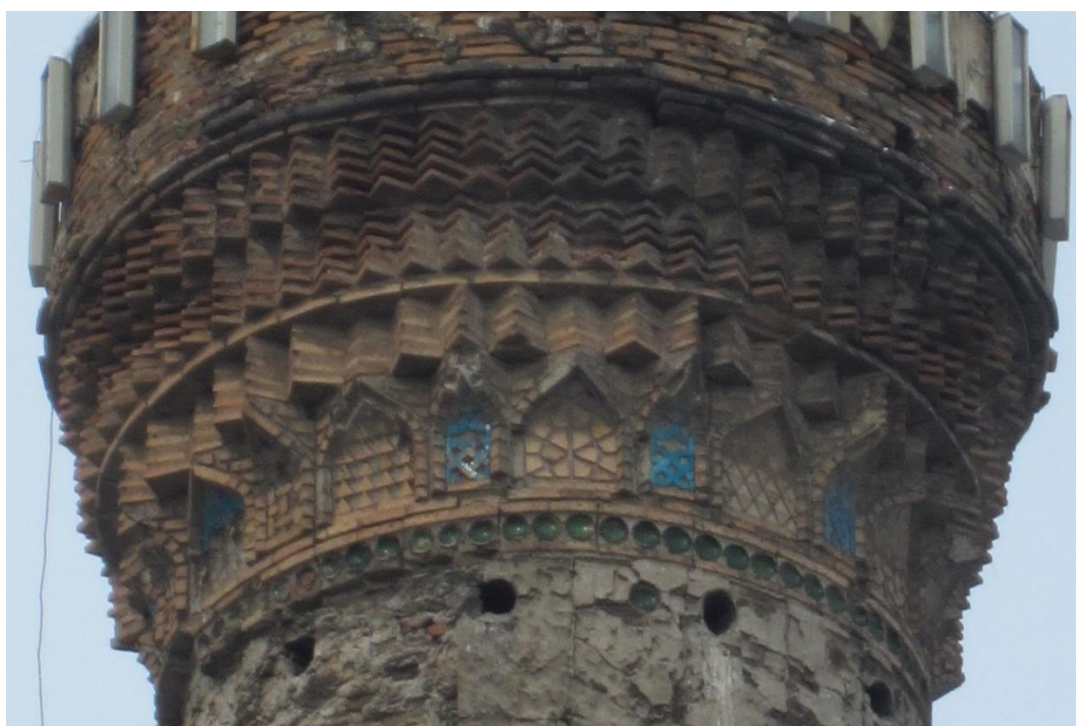


Fig. 2.89 – Great Mosque minaret, Sivas (609/1212-13); muqarnas band © R. McClary

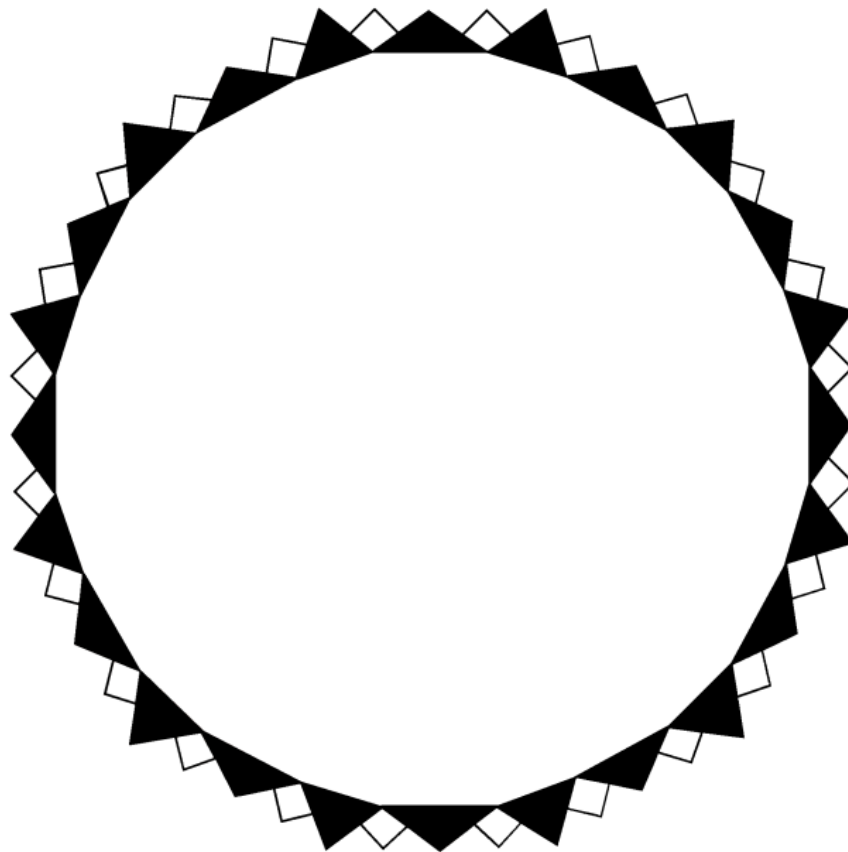


Fig. 2.90 – Great Mosque minaret, Sivas (609/1212-13); balcony muqarnas plan
© R. McClary

Subsequent developments

The Sivas minaret introduces a number of decorative motifs into Anatolia which were previously employed on Ghūrid, Great Saljūq and Ildegizid tombs and portals. It was not until the Eğri minaret in Aksaray, built during the reign of ‘Izz al-Dīn’s brother and successor ‘Alā’ al-Dīn Kay Qubādh (r.616-634/1219-1237), that a new architectonic form was introduced to Anatolia. The direct connection of the square base to the cylindrical shaft, without an octagonal zone of transition but by way of bevelled facets on the four upper corners of the base to create an octagonal bed for the shaft to sit on instead is unique to Rūm Saljūq minarets built shortly after c.616/1220.²⁶⁷ If the ‘Turkish triangle’ squinches, such as those supporting the dome in the ‘Izz al-Dīn Kay Kāwūs I tomb in Sivas, are seen as enclosing space, then the solid minaret base is the same form in reverse, but serving the same architectonic

²⁶⁷ The roughly coeval Gulistan tomb at Julfa, in the south of Nachchivān has a similar form to its base, but is stone-built and on a somewhat larger scale. See Yazar (2007), pp.109-113 and pp.471-486.

function, namely transitioning from a square to support a circle.²⁶⁸ Along with the Eğri minaret, the Yivli minaret in Antalya, featuring a gadrooned shaft, is one of the few attenuated minarets of the period of ‘Alā’ al-Dīn Kay Qubādh, as it was during his reign that shorter minarets proliferated, becoming part of the design schema for all but the smallest of mosques.

Minarets: conclusion

The main mosque of the major cities of the sultanate represented the confluence of political and religious power. The addition of minarets to pre-existing buildings provided a way for the sultan to add an external visual dimension to the well-established aural presence and legitimacy resulting from the mention of the sultan’s name in the Friday *khuṭba*. The *minbar* has been called an internal symbol of the sovereignty of the ruler²⁶⁹ and the minarets added in the early decades of the 7th/13th century may be understood, in part, as being the external visual expression of the power and piety of the sultan. It is perhaps noteworthy that the less prestigious and less commercially important cities, such as Niksar, did not have minarets added to their existing Great Mosques in the early decades of the 7th/13th century in the way that Kayseri and Sivas did.²⁷⁰ Although the late addition of minarets precludes a purely functional role, there is no doubt that they were used for the *adhān*. It appears to be the case that minarets were employed in the early 7th/13th century as visual and aural markers of both heavenly and earthly rule. These are concepts that in any case are very difficult to disentangle in the medieval context because of the paucity of sources.

It is in relation to imperial propaganda that the purpose and meaning of the Sivas minaret in particular, and perhaps by extension the other attenuated brick minarets of the period, may also be understood. A number of events can be used to argue against a *jihād* interpretation of ‘Izz al-Dīn’s foreign policy. These include the signing of a treaty with the Venetian *podesta* in Constantinople,²⁷¹ a peace treaty in 607/1211

²⁶⁸ See appendix 2.8 for a descriptive analysis of the Eğri minaret.

²⁶⁹ Mecit (2011), p.66.

²⁷⁰ For the history and importance of Sivas in the early 7th/13th century see the introduction to chapter four, pp.272-4.

²⁷¹ Martin (1980), p.321 states that the date of the treaty is unknown but it is mentioned in the treaty ‘Alā’ al-Dīn signed with the Venetians in March 1220 [616].

with Theodore I Laskaris of Nicaea,²⁷² and the attack on northern Cilicia including occupation of castles, on behalf of the Christian king Bohemond IV of Antioch.²⁷³ In 615/1218 he campaigned, albeit unsuccessfully, against the Muslim Ayyūbids in northern Syria.²⁷⁴ Even the conquest of Sinop in 611/1214, and the re-conquest of Antalya in 612/1216 from Christian rule,²⁷⁵ were more likely to have been motivated by economic rather than religious considerations. Despite, or perhaps because of, these actions, there was a clear desire to promote the image of being a dynasty that waged *jihād*.²⁷⁶ This was demonstrated by the use of terms such as ‘killer of the infidels’ in sultanic epigraphy.²⁷⁷ It is perhaps too simplistic to use the term victory minaret in the context of the Sivas minaret, but the inherent implication of the inevitable victory of Islam inherent in the form and epigraphy of the minaret is harder to dismiss. The Kayseri, Akşehir and Sivas Great Mosque minarets all represent the projection of political power and a new symbol of Islam.²⁷⁸ They were highly visible to visiting merchants and the resident population not only within the urban milieu, but also from the surrounding landscape beyond.

The combined efforts of the patron and the craftsmen produced a mix of form and decoration that facilitated a level of interaction with the viewer through sight. That interaction extended beyond the purely visual into the intellectual, and addressed issues of political legitimacy and religious piety.

A separate part of the process of the creation of an imperial aesthetic, although related to a number of the elements used in the portals and tombs, involved the construction of tall brick minarets in the manner developed under the Great Saljūqs

²⁷² Cahen (2001), p.50.

²⁷³ *Ibid.*, p.51.

²⁷⁴ Cahen (1978), p.813.

²⁷⁵ Redford and Leiser (2008), p.95.

²⁷⁶ Mecit (2014), pp.105-6 states that *jihād* was a central element of the epigraphy on the walls of Antalya.

²⁷⁷ Hillenbrand (2007), p.161 cites the grandiose *jihād* titles on the *minbar* of 550/1155-6 for Kılıç Arslān II in Konya, and on, p.164 states that the Rūm Saljūq sultans saw themselves as standing in the tradition of those who waged *jihād* in the manner of Alp Arslān.

²⁷⁸ Bloom (2013), p.266 states that by the beginning of the 7th/13th century the minaret was almost universally accepted as a symbol of Islam.

in Iran. They first occur in Anatolia the early years of the 7th/13th century.²⁷⁹ The strongly vertical aesthetic employing cylindrical shafts drank deeply from the well of Iranian brick minaret construction, and projected a clear and permanent message of the Islamic rule of the lands in which they were located. They are also in contrast to the stone-built square minarets of the Zangid and Ayyūbid period, built in northern Syria, south of the lands under Rūm Saljūq control, which also announced Muslim rule. Examples include the Kot minaret in Silvan (Mayyāfāriqīn) (c. 607/1210) (fig. 2.91), the minaret attached to the north-east corner of the Great Mosque in Aleppo (487/1094) and another at the Great Mosque in Ma'arrat al-Nu'mān (c. 565/1170). There was the clear rejection of one form connected with the Ayyūbids, whilst they consciously adopted another, namely the bi-chrome marble interlace decoration seen on the earlier madrasa *miḥrābs* of Aleppo. The singular nature of the motif appears to add credence to the unique character of the appropriation and adaptation of the Aleppine example, and its specific context concerning 'Izz al-Dīn's claims to the city.

The brick minarets created a visual link to the architecture of the Great Saljūqs in Iran. It may have been the case that a desire to create a visual connection between the lands of the Rūm Saljūqs and Iran was the part of the reason for the style of minarets that were added to some of the Great Mosques of the sultanate. The problem with making any sort of link, beyond the presence of builders from that region and trained in the techniques of Iran, is in understanding to whom the message was addressed. It is unlikely to have been the largely Christian population, who would not have had any understanding of the antecedent structures in Iran. It is possible that the numerous visiting bureaucrats and scholars from Iran and Central Asia would have understood the message that the minarets projected. The choice of form and materials may have been more a result of a conscious desire to reject the existing Ayyūbid minaret aesthetic of the land to the immediate south, and was the only alternative. Given the regional rivalry, as well as the presence of trained brickworkers, it was probably a combination of these and perhaps other, as yet unknown, factors. The

²⁷⁹ The minaret attached to the Great Mosque in Kayseri has been so extensively modified and altered that it is unclear which, if any, of the decorative elements are original but it may have been the first of its type built in Anatolia.

addition of minarets across Anatolia in the first few decades of the 7th/13th century may well have been motivated by a desire to project an overtly Islamic aesthetic more forcefully across the region, reflecting the increasing successful process of Islamisation across the region. The strongly Persianate aesthetic may also be connected to a desire on the part of the Rūm Saljūqs to fill the vacuum of legitimacy which resulted from the final collapse of the Great Saljūqs with the death of sultan Toghril III in 590/1194. Furthermore, the addition of brick minarets to pre-existing stone-built structures created visual signifiers of dynastic change into the urban landscape of the major cities of Anatolia.²⁸⁰



Fig. 2.91 – Kot Minaret, Silvan (c.607/1210) © R. McClary

²⁸⁰ A point kindly suggested by Dr. Suzan Yalman (personal communication 23/4/2015).

City	Name	Date	Brick	Stone	Location
Ani	Manüchihir mosque	c. late 5 th /11 th c		x	Lat: 40°30'18" N Lon: 043°34'12" E
Erzurum	Tepsi	c. mid 6 th /12 th c	x		Lat: 39°54'27" N Lon: 041°16'34" E
Harput	Great Mosque	561/1166	x		Lat: 38°42'22" N Lon: 039°15'18" E
Ani	Abū'l-Mu'amran	595/1198-9		x	Lat: 40°30'27" N Lon: 043°34'17" E
Kayseri	Great Mosque	c. early 7 th /13 th c	x		Lat: 38°43'11" N Lon: 035°29'08" E
Sivas	Great Mosque	609/1212-13	x		Lat: 39°44'48" N Lon: 037°01'04" E
Akşehir	Great Mosque	609/1213	x		Lat: 38°21'23" N Lon: 031°24'41" E
Aksaray	Kesik Minare mosque	c. 617/1221	x		Lat: 38°22'29" N Lon: 034°01'10" E
Niğde	'Alā' al-Dīn mosque	620/1223		x	Lat: 37°57'59" N Lon: 034°40'44" E
Aksaray	Eğri	616-34/1220-37	x		Lat: 38°22'36" N Lon: 034°01'45" E
Antalya	Yivli	616-34/1220-37	x		Lat: 36°53'11" N Lon: 030°42'16" E
Akşehir	Güdük Minare mosque	623/1226	x		Lat: 38°21'25" N Lon: 031°24'34" E
Malatya	Hötüm Dede	c. 1 st ¼ 7 th /13 th c	x		Lat: 38°25'09" N Lon: 038°22'01" E
Malatya	Melik Sunullah	c. 1 st ¼ 7 th /13 th c	x		Lat: 38°25'12" N Lon: 038°21'47" E

Table 2.5 – Minaret corpus and locations

CONCLUSION

Against the traditionally lithic background of previous Anatolia architecture, brick became the unit material of choice for the attenuated minarets of Great Mosques and for a number of prestigious tombs, but it is conspicuously absent from the surviving corpus of portals. Given the rapid adoption of the medium in the early period, it begs the question why, for the most part, brick construction does not remain part of the canon after the first quarter of the 7th/13th century.²⁸¹

The tenacious nature of the indigenous lithic tradition must be part of the answer, but aesthetics and cost may have had a part to play as well. There was a large, if at times unevenly distributed, Christian population,²⁸² a number of whom would have had experience in stone construction. The increased labour input required for quarrying and cutting stone in comparison with brick construction may well have been offset by the time and cost involved in gathering the large amounts of fuel required to bake the bricks. In addition, apart from the facing ashlar, the internal mass of stone walls consists of unworked rubble, whereas the entire thickness of a brick wall requires manufactured units.

The preceding comparison of the various constituent elements of the portals, tombs and minarets shows that within an ostensibly diverse corpus a number of general rules can be discerned. This is particularly the case with the stone muqarnas hoods and the octagonal form of most of the tombs, regardless of the medium of their construction. The analysis of the sample structures demonstrates just how wide a stylistic net the various craftsmen cast in order to synthesise a new architectural aesthetic for the Muslim rulers of Anatolia. This was fashioned from the pre-existing Islamic traditions of Greater Iran, Syria and Egypt, as well as employing elements of the indigenous and regional Christian ecclesiastical traditions. This overview of the

²⁸¹ A few brick minarets and some small tombs were built throughout the rest of the 7th/13th century. Brick is used for domes, but increasingly, like at the Büyük Karatay madrasa in Konya, the construction material is covered with a layer of glazed tiles.

²⁸² Dadoyan (2013), p.147 states that the population of Anatolia in the early 7th/13th century was overwhelmingly Greek in the west and Armenian in the east. Mecit (2014), pp.103-5 states that populations of Sinop and Antalya were predominantly Greek Christians. Yāqūt al-Buldān wrote in the early 7th/13th century that the majority of the population of Erzincan were Christian Armenians. See Goshgarian (2013), p.239. There were also large numbers of Syrian Orthodox living in the south of the region, around Malatya.

three most distinctive and decorative structural components and building typologies lays the foundation for the following analysis of the constituent materials and working methods of the craftsmen responsible for their construction. It is important to note at this juncture that the buildings discussed above are only a small fraction of the extant structures in Anatolia. The full corpus of architectural remains which survive from the period prior to 617/1220 is in excess of a hundred. It includes, but is not limited to, city walls, bridges, madrasas, mosques, caravanserais, workshops and baths as well as the remains of palaces and citadels.²⁸³

The wholesale architectural redevelopment of the region was needed because of centuries of neglect and decline.²⁸⁴ There was an economic imperative to create a functioning and secure network of caravanserais and the connecting infrastructure of roads and bridges, along with the reinforcement of urban mural defences, in order to increase security of trade and the concomitantly larger tax revenues. Tabbaa has argued that architectural patronage at the time in the broader region was an attempt to regain the unity lost by the ending of a unified Islamic state following the collapse of the Umayyads.²⁸⁵ As with almost all buildings, functional need was the primary reason for the construction of the majority of the structures. The unique imperial aesthetic that was emerging across the Rūm Saljūq sultanate in the early 7th/13th century appears to be part of the process of reinforcing the political legitimisation of the dynasty. Although the sultanic titulature seen in some of the surviving epigraphy of the Rūm Saljūqs claims a wider dominion than was under their direct, or even peripheral control,²⁸⁶ they do not extend to the level of universal rule claimed by the

²⁸³ For a comprehensive survey of the tombs see Önköl (1996). Madrasas are covered by Kuran (1969), caravanserais are discussed in detail in Erdmann (1961) while Goodwin (1994) gives an overview of the surviving bridges of the Rūm Saljūq period. Regarding defensive mural remains, see Redford (2010) for Sinop, and Redford and Leiser (2008) for Antalya. Akurgal (1980) and Hillenbrand (1994), pp.92-94 and plans 482-486 both feature a brief overview of a number of the major mosques of the period.

²⁸⁴ Peacock (2010), pp.160-163 cites the letters of the bishop of Euchaita of c.1050 CE that described the situation in non-coastal Anatolia prior to the arrival of the Turkic Muslims as being in a state of wilderness and desolation. In the 5th/11th century significant areas were undergoing economic decline and depopulation.

²⁸⁵ Tabbaa (1997), pp.184-5. He goes on to argue that the process of architectural development was part of a shift in the late medieval period from ideas to things, from literature to architecture.

²⁸⁶ See the epigraphy on a *minbar* in Konya in chapter three, and the foundation epigraphy of the hospital in Sivas in chapter four.

contemporary Khwārazm Shāh Muḥammad ibn Tekesh (r.596-617/1200-1220),²⁸⁷ who used the title ‘Sovereign of the world, Supreme sultan, Commander of all the earth’.²⁸⁸

The land boundaries were generally fairly fluid in nature, with shifting alliances and regions of influence. The importance of the urban centres, ports, trade corridors and mines surpassed that of much of the uncultivated land of the Anatolian plateau that constituted the largest part of the lands of the Rūm Saljūq sultanate. Buildings are a fixed marker and permanent presence in the landscape. As a result, the widely distributed architectural expressions of power and piety may be considered as the unifying visual element. They were spread across a region that was in actuality a mass of contradicting political, ethnic and religious loyalties and alliances. Examples of this include Erzincan, which was an Armenian city under Mengüjekid control yet the Muslim rulers were rarely mentioned in the surviving written Armenian records from the period.²⁸⁹ In addition, Mughīth al-Dīn, the Rūm Saljūq ruler of Erzurum, appears to have professed loyalty to the Rūm Saljūq sultan in Konya, the Georgian Bagratids, and the Ayyūbids of Syria at the same time.²⁹⁰

There are some aspects of architectural patronage that are notable for their absence and that may suggest changes to the nature of society when they do begin to appear. The most significant is the very limited number of madrasas built in the region during the period of study. As the primary institution for the training of ‘*ulamā*’, their absence strongly suggests a lack of any significant ‘*ulamā*’ group in Anatolia at the time.²⁹¹ Such an absence is in contrast to the contemporary situation in the Ayyūbid-ruled cities to the south, especially Aleppo and Damascus.²⁹² Subsequently madrasas came to proliferate across Anatolia in the post-Köse Dağ period of Ilkhānid domination.²⁹³

²⁸⁷ Bosworth (1996), p.179.

²⁸⁸ Barthold (1968), p.333.

²⁸⁹ Goshgarian (2013), pp.240-41.

²⁹⁰ Peacock (2006), pp.136-7.

²⁹¹ Yıldız and Şahin (2013), pp.191-2.

²⁹² See Humphreys (1994), especially p.37 for the madrasas of Damascus and Tabbāa (1997), pp.124-161 for the Ayyūbid madrasas of Aleppo.

²⁹³ See Kuran (1969) and Hillenbrand (1994), pp.206-215.

CHAPTER III

***Materials and Methods:
The Construction Process in Medieval
Anatolia***

INTRODUCTION

Having examined the primary elements of external decoration of the early corpus this chapter investigates the nature and uses of the constituent materials. This involves the exploration of the methods employed by the craftsmen to combine these materials and to examine the specific details of handling them. This close analysis of the methods of construction provides a window on the working practices of the craftsmen and construction workers of 6th/12th and 7th/13th century Anatolia. These people are for the most part anonymous, but the structures are as much a memorial to them as they are to the elite patrons who funded them.

The arbitrary end point of 617/1220 for this study is, arguably, justifiable in stylistic and dynastic terms but it is clearly not a fixed point in regard to the craft practices. As a result, a few glazed tile, mortar, brick and stone examples dated to the slightly later period (from which more structures survive) will be examined. Their inclusion will better demonstrate the diversity of techniques and materials used in the construction of buildings by the Rūm Saljūqs, and other Turko-Muslim dynasties, in the period of study.

Rogers made a valiant attempt to paint a picture of the division of the more senior roles involved in the design and site management process, based on epigraphic evidence, in his doctoral thesis.¹ This process has been continued by Redford, particularly regarding the inscriptions on the walls of Sinop.² To descend lower down the chain of command in order to understand the division of the roles concerning the physical site surveying, levelling and the construction process, the already dim literary and epigraphic sources fade to black. What remains is the physical evidence within the structures themselves, and it from these sources that a conjectural hypothesis in regard to the necessary roles and processes must be deduced. Although it may never be known which roles overlapped, and which were a specialist preserve

¹ See Rogers (1972), pp.400-418 and 428-447. He ultimately concludes that apart from a larger number of named architects/craftsmen than most other regions of the *dār al-Islām*, few concrete conclusions could be proven about the organisation of the architectural and fiduciary roles in the construction process of 7th/13th century Anatolia.

² See Redford (2010), pp.130-140 for a discussion of the possible division of roles, based upon the six *amīral* inscriptions and four named architects on the Sinop walls which were rebuilt in 612/1215.

of one individual, it is possible to determine what had to be made, moved, cut, baked, carved, lifted and mortared, in order for the extant structures to exist. Working in such a manner, an imperfect, yet significant, picture of the skills and actions of the workforce emerges. The structural forms can act as a source for an understanding of an element of the social history of a segment of the population of Anatolia that was employed in the first major regeneration of the urban and commercial infrastructure of much of Anatolia in centuries.³ The required roles are examined in each of the following sections, which deal with the various materials employed, before a more comprehensive overview of all the roles is attempted in the final section of the chapter.

The sheer diversity of materials used in one structure can be seen in the façade of the Ferruh Shah mosque (621/1224) in Akşehir.⁴ It features all the main materials of the region: namely, marble Byzantine funerary and ecclesiastical spolia, ashlars, rubble, timber beams, glazed tiles, bricks and mortar. The small domed cube mosque represents the fusion of both eastern and western traditions in a rather mis-matched combination of styles and techniques (fig. 3.1).⁵



Fig. 3.1 – Ferruh Shah Mosque, Akşehir © R. McClary

³ Peacock (2010), pp.160-163.

⁴ See Akurgal (1980), p.86 for the ground plan of the building.

⁵ Ousterhout (1999), p.128 refers to the style of building with brick and stone in the Byzantine tradition as *opus mixtum*. The Akşehir buildings may be considered a variant of this style.

STONE

It was stone, primarily limestone or sandstone, along with smaller amounts of basalt and marble, that was the primary building medium of construction in the Rūm Saljūq sultanate and the other Turko-Muslim polities of the region. This reflected the pre-existing predilection for lithic construction in the region, prior to the arrival of the Saljūqs and the Türkmen nomads, from the mid-5th/11th century onwards. The dominance of the local material, in contrast to the limited use of brick, for the construction of buildings that may loosely be described as Islamic (based either on their function or the name of the patron) suggests that, initially at least, the craftsmen were Christians.⁶

The technique of using a dressed ashlar skin with a rough inner surface to increase mortar adhesion, on either side of a rubble and mortar core, was long-established in the indigenous building traditions of Anatolia. The same method was also employed in the Syrian south in both the pre-Islamic and Islamic period. The stone buildings of the Rūm Saljūqs and other Turko-Muslim dynasties were built using the established techniques, with the exception of the stereotomic muqarnas hoods. Innovation was reserved for the incorporation of new modes of decoration, and the form adapted to suit the different functional needs of the new patrons. The established structural elements and the innovative decorative motifs and forms came together to create the patterns and forms which have been examined in the previous chapter.

It can be difficult to determine whether the building material is limestone and sandstone by eye, but the different colours seen in sandstone are caused by different inclusions. Grey results from clay, while red, brown and yellow are due to the presence of ferric oxides in the stone.⁷ The softness of stone, due to higher water content when freshly quarried, makes it much easier to work, and as the stone dries it hardens. This is particularly the case with the volcanic tuff that was commonly used,

⁶ There was a wide array of different Christian denominations in the region at the time, including Syrian Orthodox, Greek, Armenian and Georgian. It is likely that craftsmen from a number of different denominations would have worked for the new rulers on their increasingly large number of architectural commissions.

⁷ Clifton Taylor (1972), pp.58 and 110.

especially in Kayseri.⁸ The harsh winter weather in Anatolia precluded building all year. Aside from the working conditions, the mortar would not set, and the moisture content in the freshly quarried stones which made them easier to work also made them too brittle to work if frozen.⁹ The ashlar could be prepared with an axe or hammer and fine grained sandstone and limestone can be cut with a toothed saw.¹⁰

There are three primary phases in the stone building process. The stone must be quarried and transported to the site, after which the stones must be cut before they are finally set. It may be assumed that cranes and pulleys would be needed to lift all but the smallest blocks from the ground and into place. The cutting process required one set of tools, while the process of laying stones required another. For cutting, the tools required include stone axes, gavels, iron chisels, mallets and handsaws, while the layers would have used stone hammers, large setting chisels, and tools for winding up stones. The individual masons would have had their own square,¹¹ and al-Jazarī, in his *Kitāb fī ma'rifat al-ḥiyal al-handasiyya* (Compendium of Science and Useful Practice in the making of Mechanical Devices), attests to the use of plumb lines in the late 6th/12th century.¹²

Stone sculpture

There was fairly limited use of sculpture in the round on Rūm Saljūq architecture, with surviving examples tending to be in relief but there are pairs of stone lions on the portal of the hospital in Sivas¹³ and there were two lions set into the north wall of the Kılıç Arslān II kiosk in Konya. In addition, there is a pair of rampant lions flanking the inscription of 'Izz al-Dīn Kay Kāwūs I that is dated 612/1215 set into the citadel tower of Sinop.¹⁴ The kiosk in Konya was part of the royal palace, with a tiled iwan and balcony above the lions. One lion was removed prior to the 1890's,

⁸ Rogers (1972), p.439.

⁹ Knoop and Jones (1967), pp.118-119.

¹⁰ *Ibid.*, pp.77-78.

¹¹ *Ibid.*, p.54. The authors draw primarily on European sources, but the techniques and tools remained basically unchanged from the Roman period until the nineteenth century.

¹² Hill (1974), p.278. In addition, Wilber (1976), p.32 (citing Rosenthal (1958), p.363) refers to Ibn Khaldun's reference to builders using plumb lines to make walls perpendicular.

¹³ See chapter four, pp.296-300.

¹⁴ Redford (2010), p.130.

but an early 20th-century photograph shows the other one still *in situ*¹⁵ (fig. 3.2). One of the two lions is now in İstanbul (fig. 3.3).¹⁶ The highly visible location on the palace is similar to that of the other lions and although they were seated and faced outward rather than standing and viewed from the side, the apotropaic function and royal symbolism may be assumed to be the same in all cases.¹⁷ The pairing of lions is a royal motif which predates Islam, and examples can be seen in a royal Persian context on Sassanian silverware.¹⁸

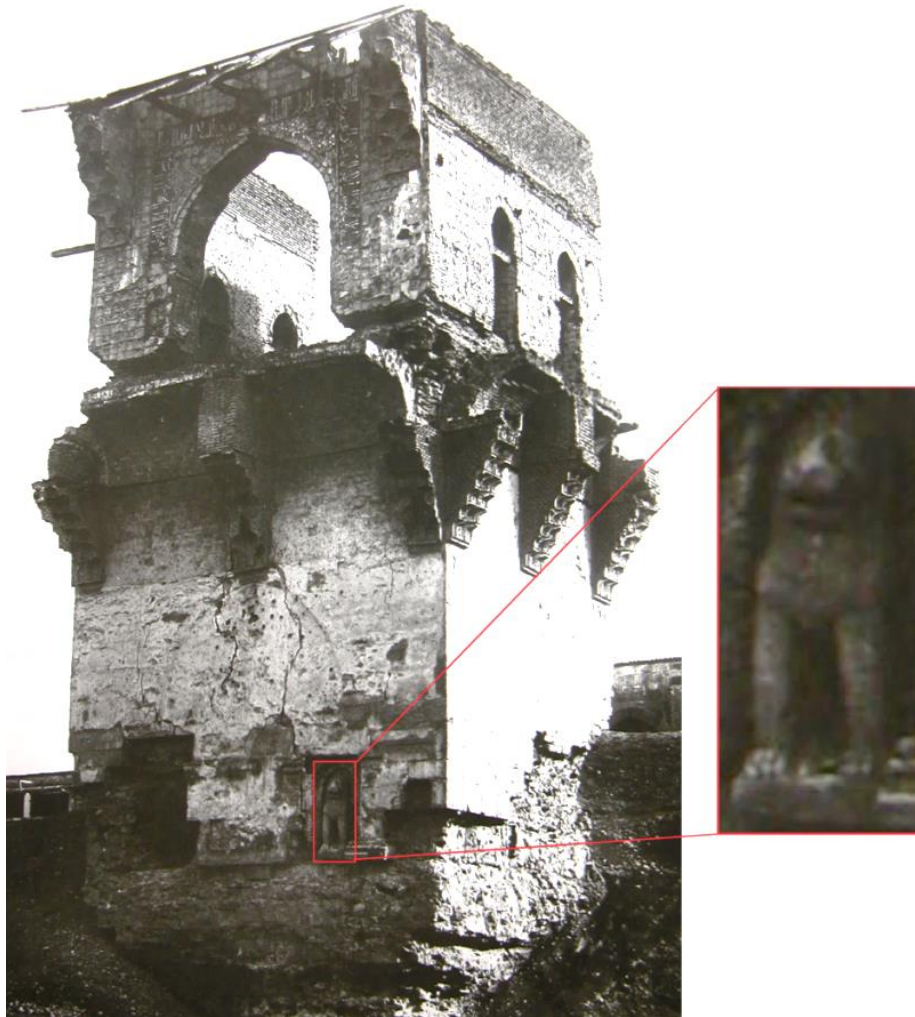


Fig. 3.2 – Stone lion set in to the north façade of Kılıç Arslan II kiosk, Konya (c.569/1174)¹⁹

¹⁵ Önge (2011) p.144 notes that the other lion was removed in April 1907, causing extensive cracks to the structure, and three months later the upper section of the kiosk collapsed.

¹⁶ Gertrude Bell's diary entry for Monday the 8th May 1905 records a stone lion in a garden in the citadel that "probably comes from the tower which is still standing". Source: www.gerty.ncl.ac.uk/diary_details.php?diary_id=485 (accessed 12/01/2015)

¹⁷ See pp.253-6 for the Artuqid brass lion heads on doorknockers.

¹⁸ Erdmann (1969), pl.61 shows a bowl held in the St. Petersburg Hermitage Museum that depicts two lions, and Shapur II on horseback.

¹⁹ The original photograph, taken by Sarre, is reproduced from Arık (2008), p.228, fig.164.



Fig. 3.3 – Stone lion from the Kılıç Arslân II kiosk, Konya (after Öney (1969), p.X, fig.16)²⁰

²⁰ The lion is now in the Türk ve İslam Esleri Müzesi, İstanbul. Öney (1969), p.XXV, fig.48 shows a section of plaster revetment from inside the kiosk, which also features a lion.

Stone pattern design and execution

The earliest example of a stone portal in Anatolia is the citadel mosque in Divriği (576/1180-81). It reveals the largest number of incised lines and it appears to be the case that, over time, the lines are incised less deeply (or not in a permanent manner) particularly in the period after the death of 'Izz al-Dīn Kay Kāwūs I. The portal of the citadel mosque in Divriği has two examples of note. The rectilinear geometrical pattern in the top right corner of the door has clearly visible grid lines (fig. 3.4). This was probably the first part executed, as the top left corner of the door has far fewer visible construction lines than the right corner, suggesting that the craftsman had worked out the construction of the pattern by the time he got to the other side.



Fig. 3.4 – Citadel mosque, Divriği (576/1180-81); portal door jamb detail © R. McClary

In addition to the corner patterns, the bottom of the tympanum, above the door and below the square panels with geometric patterns (which also feature visible

construction lines) is a band of incisions which are the underlying design for a strip of decoration that was never executed. The pattern, based on circles, consists of two rows of wavy lines (fig. 3.5). The lack of any finished pattern allows a rare glimpse into the working methods of the craftsmen who executed one of the earliest decorative stone portals in Anatolia. On the north edge of Divriği, below the citadel, is the Sitte Melik tomb. The patterns on the portal of that tomb also feature a number of visible incisions. In addition, the surface of the pattern around the entrance has visible tooling marks (fig. 3.6).

As well as providing the grid for geometrical strapwork interlace patterns, shallow surface incisions were also used to plan muqarnas cells carved into flat surfaces. Surviving examples of construction lines can be seen over the flanking niches of the outer enclosure portal of the Mama Khātūn tomb in Tercan (figs. 3.7 and 3.8). Like the citadel mosque in Divriği, it is the unfinished section, over the corner column, that reveals the underlying grid most clearly (fig. 3.8). The presence of the incisions suggests that, as in the Byzantine tradition of stone building, the design and execution of structures in stone were inextricably linked.²¹



Fig. 3.5 – Citadel mosque, Divriği (576/1180-81); portal lintel and tympanum detail
© R. McClary

²¹ Ousterhout (1999), p.259.



Fig. 3.6 – Sittte Melik tomb, Divriği (592/1196-7); portal door jamb detail © R. McClary



Fig. 3.7 – Mama Khātūn tomb, Tercan (c. 596/1200); upper band of muqarnas above left niche © R. McClary



Fig. 3.8 – Mama Khātūn tomb, Tercan (c.596/1200); lower band of incomplete muqarnas above left niche © R. McClary



Fig. 3.9 – Upper muqarnas band of gravestone, south-west corner of Ahlat cemetery (c. late 6th/12th century) © R. McClary

The style of funerary stelae developed by the stone masons in Ahlat emerged in the late 6th/12th century, following the demise of the ruling Sökmenid dynasty.²² The lack of patrons led to the subsequent decline in architectural patronage that had been thriving for the previous twenty years.²³ Pancaroğlu has argued convincingly that Ahlat was probably the place where muqarnas were translated into stone in Anatolia, and introduced into the architecture of the region.²⁴ The example in fig. 3.9 shows the upper portion of one of the earliest tombstones, located in the south-west corner of the large graveyard. There is a strong stylistic continuity in the form of the tomb stones, of which several thousand survive, from the later 6th/12th century through to the 8th/14th century.²⁵ The incised construction lines are clearly visible and the form and technique can be related to that of the muqarnas bands over the niches which flank the portal in Tercan. The *nisba* of the craftsman of the earliest surviving stone muqarnas at Divriği and Aksaray is *al-Khilātī*, which further supports the argument that it was in Ahlat (Ar. *Khilāt*) that the carving of muqarnas in stone developed in Anatolia.²⁶

The same method of incising construction lines as was used by stone carvers was also employed by wood carvers when laying out geometric patterns (fig. 3.10).²⁷ Little is known about the degree of specialization of trades during the period of study, but the same people are not thought to have worked on different materials in the broader region.²⁸ That said, such similarities of technique, as well as the use of chisels, axes and saws to work both materials, may go some way to explaining why the name carved onto the stone-built Alay han ends with what appears to be *al-najjār* (the woodcarver).²⁹ He may have taken on a more supervisory role, or been capable of working in both wood and stone.

²² See Bosworth (1996), p.197 for details about the Sökmenids.

²³ Pancaroğlu (2013), p.55.

²⁴ *Ibid.*, p.55.

²⁵ Rogers (1988), p.109 states that the earliest standing stelae is dated 585/1189.

²⁶ See chapter two, pp.55-56 for details of earlier stone muqarnas in Fāṭimid Cairo.

²⁷ The door, originally from the Kuyulu Hoca Paşa mosque in Ankara (c.7th/13th century), is now in the Etnografya Müzesi in Ankara, accession number 8015.

²⁸ Rogers (1976), p.101.

²⁹ Pancaroğlu (2013), p.41.



Fig. 3.10 – Kuyulu Hoca Paşa mosque door detail (Etnografya Müzesi, Ankara)
© R. McClary

Stone: conclusion

There are a number of reasons for the prevalence of stone over brick construction in the Islamic architecture of Anatolia. Stone construction requires a far lower energy input than that required for brick construction, owing to the amount of fuel needed for the brick kilns. In addition, there were far more experienced stonemasons in the region than there were brick workers, owing to the strength and longevity of the indigenous building tradition.³⁰ There was a greater opportunity for external decoration of stone in a similar manner to the woodwork, which was employed for *minbars*, doors and window shutters, than there was with brickwork. This allowed for the overall stylistic unity across diverse materials which is so typical of the broader field of Islamic art and architecture.

³⁰ Flood (2009), p185 compares the contemporary situations of Ghūrid India and Rūm Saljūq Anatolia, as in both places there was a continuity of workshop practices following the arrival of Muslim rulers. In Anatolia, Muslim and Christian architects oversaw masons who were mostly Greek Christians.

BRICK

Introduction

The detailed analysis of bricks and their uses which follows is an attempt to demonstrate their importance as a construction material in Anatolia during the period of study. This runs counter to Rogers' claim that the use of brick only had a minor place in the architecture of Saljūq Anatolia.³¹ It can be seen that some of the most visually striking monuments of the Rūm Saljūqs are built wholly or in part with bricks. These include congregational mosques, such as the one in Akşehir, the tomb and hospital of 'Izz al-Dīn Kay Kāwūs I in Sivas, and the tall minarets which were introduced as part of an attempt to project the Saljūq presence across the urban landscape and beyond.

Brick making was a highly skilled job in the medieval period, and it is likely that the same people were responsible for both making and laying the bricks.³² The basic ingredient for baked bricks is clay (aluminium silicate), but in its pure state it will distort when fired. Non-clay ingredients, primarily sand, were added in order to reduce shrinkage of the plastic material and to limit cracking in the bricks when under heat.³³ The baked bricks used in Anatolia are generally thin with a square shape. They follow in the tradition of Romano-Byzantine and Iranian brick production which are both of a similar nature. Although there is a long tradition of building with light cream-coloured bricks in Iran,³⁴ the majority of the Turko-Muslim brick structures in Anatolia (most of which have a Persianate character) are built with red bricks (figs. 3.13 and 3.15). Alongside these, there are a small number of buildings which feature a wider range of colours that extend to buff and yellow tones. The red colour is a result of the clay containing iron oxide, while the yellow colour, seen in several structures in Malatya, including the Hötüm Dede minaret (fig. 3.14), as well as the İplikci mosque and Kılıç Arslān II kiosk brackets in Konya, is

³¹ Rogers (1995), p.966.

³² Brunskill (1997), pp.16-19.

³³ *Ibid.*, p.16.

³⁴ Wulff (1966), p.115 states that the process developed in Iran to produce consistently light cream coloured bricks involved the addition of grey sand to the sieved and slaked clay and the creation of a reducing (oxygen starved) atmosphere in the kiln.

primarily due to the presence of magnesium oxide.³⁵ A study by Tuncoku, Caner-Saltik and Boke found that bricks used in a small mosque built in Konya in the early 7th/13th century were fired at a high temperature, but not as high as 1000°C,³⁶ and it is likely that such a temperature would have been used for most brick production.

There are two clear strains in regard to the structural use of bricks in Rûm Saljûq architecture. The buildings in the western region, that bordered the Greek Laskarid empire of Nicaea, created after the Latin conquest of Constantinople in April 1204,³⁷ are steeped in the Byzantine tradition of brick building techniques. In particular there is extensive use of visible timber reinforcement beams in the walls. There are numerous examples of this style in Akşehir, with the Great Mosque being the building which acts as a type for the other 7th/13th century brick buildings in the region in this study. In contrast, the tombs and minarets built from Aksaray eastwards are entirely Iranian in character.³⁸ It is the construction techniques, rather than the bricks themselves, that differ from east to west, as the range of brick sizes is fairly consistent in both areas (table 3.1). Even in the far west of the Rûm Saljûq sultanate the bricks are of a size developed in Iran, rather than that of the nearby Byzantine lands.

Although the vast majority of the bricks are thin squares, there were several other shapes employed. In early 7th/13th century radial bricks were developed specifically for the construction of minaret shafts. These are bricks with one slightly curved face for the exterior, with the two sides tapering slightly towards the back to form a wedge shape. These led to the construction of cylindrical central shafts rather than the octagonal one seen in the Tepsi minaret in Erzurum.³⁹ They also allowed for a

³⁵ *Ibid.*, pp.40-41. In addition to the presence of magnesium oxide, too low a firing temperature or too short a firing period can also produce light-coloured bricks.

³⁶ Tuncoku, Caner-Saltik and Boke (1993), p.370 found that the crystal structure of the clay minerals is lost, indicating a fairly high temperature, but there are no high temperature minerals like cristobalite, meaning that the temperature did not reach 1000° C. This corresponds with the Byzantine tradition, where bricks were baked, according to Ousterhout (1999), p.130, at between 800°C and 900°C. Early 7th/13th century bricks from Konya were found to contain feldspar, iron oxide and quartz.

³⁷ Norwich (1998), p.304. *Ibid.*, p.307 states that the official capital was at Nicaea (Iznik) but the ruler's residence was at Nymphaeum (near Izmir).

³⁸ See chapters two and four.

³⁹ It is not clear whether the centre shaft is made of dog-leg bricks or rectangular bricks with a corner cut off.

smoother curve to the outer face of the shaft.⁴⁰ In addition to the square and radial bricks there are rectangular bricks, as seen in the base of the Eğri minaret in Aksaray, as well as quarter bricks and the custom cut bricks used on the base of the Great Mosque minaret in Sivas.

Bricks are predominantly structural components but there are limited examples of them being used in a decorative context. They are used for the lettering in epigraphic bands, with surviving examples at the Bekar Sultan tomb in Gülağaç and the Tepsi minaret in Erzurum.⁴¹ The outer decorative brick bond on the Sivas Great Mosque minaret can be seen to be a skin, with the internal structure being much more irregular in appearance (fig. 2.76). Smaller bricks are used in decorative bonds and spandrels, at the Sivas Great mosque minaret and, in combination with glazed tiles, at the Akşehir Great Mosque minaret, where the bricks act as a buff contrast to the blue tiles, adding to the chromatic effect. Small sections are also used in lieu of epigraphic panels, as can be seen at the Sivas hospital and the Kırk Kızlar tomb in Niksar.

Brick sizes and production

There is considerable variation in the size of Byzantine bricks, with the standard brick being between 32cm to 36cm square and a thickness range of 3.5cm to 5cm.⁴² The bricks used in the buildings of the Islamic period also have a wide variation in size, with the measured samples having a range of 18cm to 25cm per side and a thickness of 3.8cm to 6cm. On average, the bricks employed in the Islamic architecture of Anatolia are about 20cm square and closer to 5cm thick, making the majority of the surviving examples smaller and thicker than the Byzantine bricks (fig. 3.11).

⁴⁰ The wedge shape allowed for narrower external rising beds as there were no longer such large triangular voids to fill with mortar between each brick in the bond. Despite this development, the use of the decorative properties of a wider rising joint than bed joint continued after the inevitability of such a pattern (owing to the use of a series of square modules to produce a circle) had passed.

⁴¹ See appendices 2.1 and 2.3.

⁴² Ousterhout (1999), p.131. Bricks generally shrink by about ten percent during the firing process.



Fig. 3.11 – Byzantine bricks in Nicaea city wall © R. McClary

Given the stylistic similarities between much of the architecture of Anatolia and that of north-western Iran it is to be expected that the size of brick used would also be quite similar. Bricks dated to the Great Saljūq period have been excavated at Gurgān (Jurjān), on the south-east coast of the Caspian Sea, which measure 20cm square and 4cm thick.⁴³ In addition the Gunbad-i Qābūs in Gurgān (397/1007) has bricks which measure 20.8cm square and 4.7cm thick.⁴⁴ Such close correlation between the sizes of bricks used in Iran and Anatolia, coupled with the formal and decorative similarities of the structures, point towards the conclusion that the majority of the brick workers in Anatolia in the period of study were migrants trained in the Iranian architectural tradition.

In the *Kitāb fī ma'rifat al-ḥiyal al-handasiyya* (Compendium of Science and Useful Practice in the making of Mechanical Devices) by Ibn al-Razzāz al-Jazarī three measurements are given. This contemporary source states that a *shibr* is half a *dhirā'* (cubit)⁴⁵ and corresponds to c.25 centimetres.⁴⁶ This distance, which roughly

⁴³ Kiani (1975), p.126.

⁴⁴ Godard (1981), p.972 gives the size but notes that there are some variations in the thickness of the bricks.

⁴⁵ Hinz (1955), p.64 states that the Arabic *ad-dhirā' as-sar'iyya* corresponds exactly with the Persian *zar'-e sar'i*, being 49.875cm, but makes no mention of the *shibr*. In the Byzantine context, Schilbach (1970), pp.19 and 44-45 mentions the span (*spithami*, σπιθαμή) and gives a distance of 23.46cm used in 7th/13th century Trebizond. The convenience of the

corresponds to the span of a human hand, is very close to the width of the average brick plus one rising joint of mortar. It appears to be the case that the *shibr* was the basic unit of measurement used by the brick builders of the period, as well as engineers such as al-Jazarī, working in the region. Another unit given by al-Jazarī is the *işbaʿ maftūḥ* (the length of a finger) a distance equivalent to four centimetres.⁴⁷ This unit of measurement is very similar to the average thickness of the bricks used in Anatolia (table 3.1), and suggests that the two basic units, for the width and the height of bricks, were standardised across a wide geographic area.

Building Name	Type	City	Sample Location	Date (CE)	Size range (cm)
Tepsi	Minaret	Erzurum	Interior of shaft	Mid-12 th c.	23 x 5.8
Great Mosque	Minaret	Harput	Base	1176	22-25 x 4.2-4.9
			Base (decorative)		14.5 x 4.8
			Base (decorative)		9.5 x 4.2
Mengücek Gazi	tomb	Kemah	Exterior	c.1190	18-20 x 3.8-4.5
			Exterior (soldier)		20 x 20 x 4
Melik Gazi	tomb	Pinarbaşı	Exterior	late 12 th c.	18.5-19.5 x 4.5-5.5
İplikçi mosque	mosque	Konya	Exterior	1202	22.5-23 x 4.5-5.5
Great Mosque	minaret	Sivas	Base	1212	18.5-21 x 4.8
Kırk Kızlar	tomb	Kemah	Exterior	c.1215-1220	20.5-21 x 5-5.5
İzz al-Dīn	hospital	Sivas	N iwan niche	1217-18	20.5 x 5
					16 x 5
İzz al-Dīn	tomb	Sivas	Interior (N wall)	1220	21.5-22 x 6
Selime Sultan	tomb	Selime	Exterior	1 st ¼ 13 th c.	20.5 x 4
Kesik	minaret	Aksaray	Base corner	1 st ¼ 13 th c.	19.5 x 10 x 4.5-5
Hötüm Dede	minaret	Malatya	Base	1 st ¼ 13 th c.	23.5-24.5 x 4-5
Zemburi	minaret	Konya	Base	1 st ½ 13 th c.	20.5-21.5 x 4.-4.5
Ertokuş	tomb	Atabey	Facet corner	1224	20-22 x 4-4.5
Eğri	minaret	Aksaray	Base	1220-1237	23.5 x 11.5 x 4-6
Great Mosque	mosque	Malatya	Courtyard column	1220-1237	18.5 x 9 x 4

Table 3.1 – Brick corpus and sizes

There are no contemporaneous written reports that describe the process of brick production in the Rūm Saljūq sultanate. In order to understand the processes involved, evidence from the Iranian and Byzantine sources must be incorporated with a logical process of deduction based on the bricks themselves.

human hand is the reason for the common measurement. Byzantine bricks appear to be based on the *foot* (πούς). Schilbach, *ibid.*, pp.14-16 gives a range between 31.18cm to 31.89cm

⁴⁶ Hill (1974), p.278.

⁴⁷ *Ibid.* Hinz (1955), p.54 suggests that an *işbaʿ* is 1/24th of a *dhirāʿ* (c.2cm) but suggests that an *aşbaʿ* in Egypt was 3.125cm. He makes no mention of the *işbaʿ maftūḥ*.

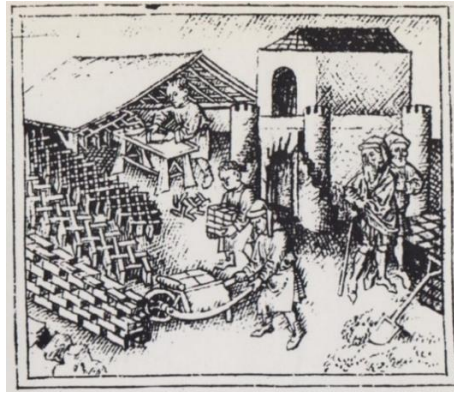


Fig. 3.12 – Medieval brickmaking, from the 'Nederlandische Bijbel', (Utrecht c. 1425 CE)⁴⁸
(after Wright (1972), fig.1)



Fig. 3.13 – Tepsi minaret, Erzurum (c. mid-6th/12th c.); interior shaft bricks © R. McClary



Fig. 3.14 – Hötüm Dede minaret, Eski Malatya (c. early 7th/13th c.); external base bricks
© R. McClary

⁴⁸ The manuscript is listed as Add.M.S. 38812 fol.78v.



Fig. 3.15 – Great Mosque minaret, Sivas (609/1212-13); external base bricks © R. McClary

The decorative interaction of brick and stone

The union of brick and stone is seen at the point of transition from foundations to walls on all the brick buildings of Islamic Anatolia. Such combinations are quite simple to execute, but the combination of the two materials in the creation of the epigraphic band near the top of the shaft of the Tepsi minaret in Erzurum is of a far more complex nature (fig. 3.17).⁴⁹ It is a possibly unique means of creating a long lasting and highly visible bi-chrome projection of the written word. The white stone background, the same as is used for the alternating bands at the base of the minaret, has been deeply and precisely excavated to allow for a large portion of the bricks to be inserted (fig. 3.16).⁵⁰ Most of the bricks' body is set within the stone, with only a short section projecting in relief. As a result the surface delamination which the two materials have suffered, most likely due to the freeze thaw process, are not significant enough to affect the legibility of the epigraphy.

The white stones are irregular in width, and the vertical breaks correspond with either an *alif*, a *lām*, or cut through a ligature so that they do not divide any individual letters in two (fig. 3.16). The entire band would have to have been composed in advance in order to allow for each of the stones with brick inserts to have been constructed on the ground and then lifted into place. The skilful synthesis of multiple materials to achieve both structural and decorative effects is typical of the

⁴⁹ Sauvaget and Wiet (1937), pp.1-2 gives the epigraphy as; Our master Diyā al-Dīn Ināndj Yabghu, Alp Toghrīl Beg ibn al-Muzaffar Ghāzī ibn Abū'l-Qāsim.

⁵⁰ The damage on either side of where a clock face was inserted in the 19th century reveals the construction method.

later developments in the Islamic architecture of Anatolia. As the example at the Tepsi minaret shows, this process was already under way in some of the earliest surviving structures of the period.



Fig. 3.16 - Tepsi minaret, Erzurum (c. mid-6th/12th c.); damaged area to right of clock face on upper shaft © R. McClary



Fig. 3.17 – Tepsi minaret, Erzurum; north-west section of the epigraphic band near the top of the shaft © R. McClary

Brick muqarnas on Rūm Saljūq buildings

There is a small and poorly understood corpus of brick muqarnas which survive from the early stage of Rūm Saljūq architecture in Anatolia, with the earliest examples dating from the period between the last quarter of the 6th/12th century to the first quarter of the 7th/13th century. While the antecedents of these structures are to be found in Iran,⁵¹ the focus here is on the transfer to, and uses of, the technique in Anatolia.

⁵¹ Examples can be seen on tombs, such as the Rayy tomb tower (534/1139), (see Pope (1938), Vol.3, pl.346), and on several surviving minarets. See note 54 below.

The original source of the muqarnas form has been much debated by scholars, with opinions as to its origin ranging from North Africa to Baghdad and Eastern Iran,⁵² but what is clear is that muqarnas cells are a form which came to be integrated into the architectural aesthetic of Islamic Anatolia from the mid- to late-6th/12th century onwards.⁵³ That Iran is the source of the forms and techniques of brick muqarnas construction in Anatolia is the unavoidable conclusion when faced with the number of closely related antecedent brick muqarnas compositions in Iran. The wide rising joints, void of mortar, that are seen at the Konya palace, as well as the Pinarbaşı and Gülağaç tombs, occur as early as the late 5th/11th century on the exterior of the Shaykh Shiblī tomb at Damāvand.⁵⁴ Furthermore, the use of bands of brick muqarnas in order to corbel out from cylindrical minaret shafts to the balcony is also a technique developed in the region of Greater Iran.⁵⁵

Although the majority of the early muqarnas in Anatolia are built in stone there is a small corpus of brick muqarnas, all of which were built in the latter half of the 6th/12th and the early decades of the 7th/13th century. They are clustered in the central Anatolian heartlands of the Rūm Saljūqs, between Konya to the west and Sivas to the east. Given the prolific, almost ubiquitous nature of the stone muqarnas hoods on the portals of tombs, madrasas, caravanserais and later, mosques, it is puzzling why (notwithstanding the *ad hoc* nature of the accident of survival) no brick muqarnas portals appear to have been built in Anatolia in the Saljūq period. The lack of a pre-existing tradition of decorative brick construction in the Byzantine and Armenian buildings of central Anatolia gives further weight to the argument that it was

⁵² See Behrens Abouseif (1993), pp.501-506 for the nature of muqarnas, Tabbaa (2001), pp.104-106 for a study of the etymology of the term and *ibid.*, pp.124-126 for a number of suggestions as to the possible meaning of the motif. Dold-Samplonius (1992), pp.193-242 also has an overview of the etymology of muqarnas, and the various opinions of scholars such as Grabar regarding the origin of the form. There is also a translation of al-Kāshī's description of muqarnas in his *Miftāḥ al-ḥisāb*, written in the 8th/14th century.

⁵³ See Pancaroğlu (2013), pp.25-67 for details about the earliest examples in Anatolia of stone muqarnas.

⁵⁴ Hutt and Harrow (1977), p.79, pl.23. The tomb features shallow muqarnas-topped niches built up from simple brick elements.

⁵⁵ Examples include the Simnān minaret (c. 5th/11th century), the Biṣṭām minaret (514/1120), (see Pope (1938), Vol. 3, pls. 360 A and B), and the Sārabān minaret (c. late 6th/12th century) (see *ibid.* pls.362 B and 366).

craftsmen moving from Iran⁵⁶ who were responsible for the construction of the few surviving examples of the art of brick decoration in Anatolia. The brief process of efflorescence that begins in the late 6th/12th century is followed by almost complete abeyance after the middle of the 7th/13th century. Throughout the course of the first half of the 7th/13th century there was a shift away from plain brick muqarnas. First, the brick structures had glazed intarsia, and subsequently the cells were constructed entirely from mortar with glazed tile mosaic intarsia applied, and no unglazed elements at all. The focus here is on the unglazed brick structures, but three transitional examples, built with varying amounts of unglazed brick and glazed intarsia, and which date from between the third and fifth decades of the 7th/13th century, are included. These are located across the region⁵⁷ and demonstrate the broader development process.

The basic building blocks of brick muqarnas compositions consist primarily of varying sizes of triangle-plan cells. These are used singly, or in combination with one or two others. They have the appearance of a lancet shaped panel that has had the upper third bent forward 90 degrees. When two triangle-plan cells are combined, it creates a rhombus plan, and three create an irregular pentagon plan (fig. 3.18). In each case, the basic unit has a wide base and narrow pointed top. An exception to these typologies is the open rhombus, as seen on the Konya palace brackets (fig. 3.18 A). In this case a single spine rises from one corner of the rhombus-plan and spreads outward and upward in the manner of an unsupported fan vault.

⁵⁶ Cahen (2001), p.163 states that a large number of Iranians from all walks of life moved to Rūm in the period prior to the Mongol conquest.

⁵⁷ The three examples are the *mihrāb* of the Akşehir Great Mosque, a pair of cornices at the springing of the south iwan entrance of the Malatya Great Mosque and the cornices at the top of the minaret shafts of the Çifte Minareli madrasa in Erzurum.

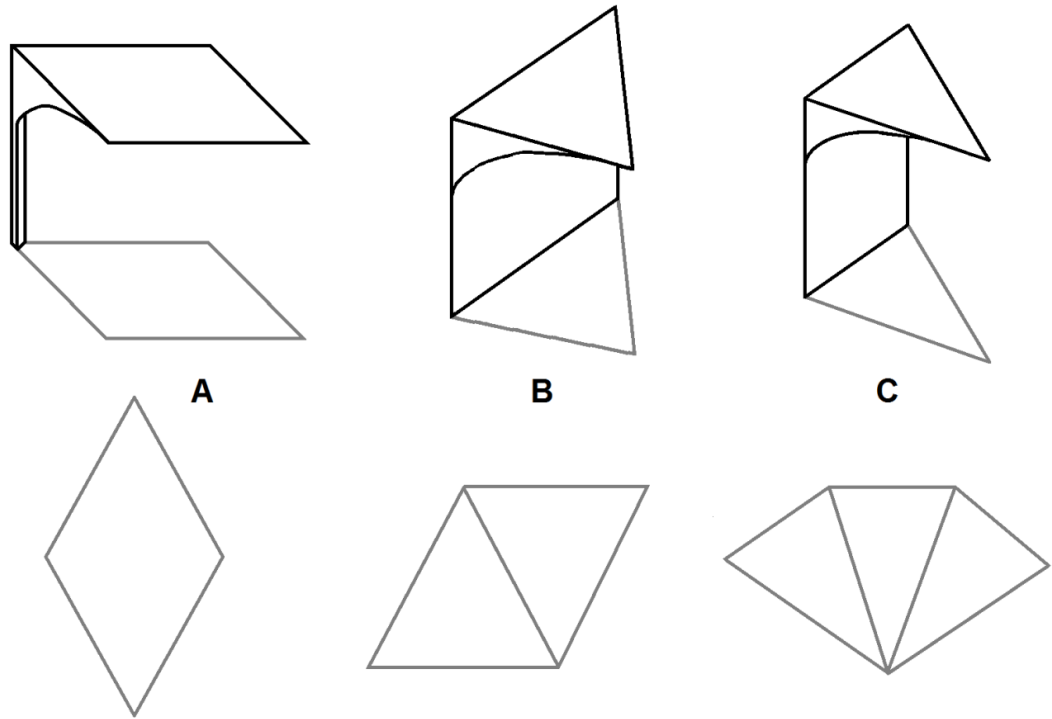


Fig. 3.18 – Basic brick muqarnas cell forms (black) and plans (grey) © R. McClary

There are three functional types of brick muqarnas and the corpus is divided below on this basis rather than by the type of building of which they are a constituent part. The first type form brackets, of which the only surviving examples are the tall projecting muqarnas brackets on the exterior of the palace kiosk of Kılıç Arslān II in Konya.

The second type comprises muqarnas cells used as a cornice on cylindrical minaret shafts. Examples include those below the balcony at the Great Mosque minaret in Sivas⁵⁸ and the Eğri minaret in Aksaray, as well as the cornice at the top of the octagonal shaft of the Bekar Sultan tomb in Gülağaç, outside Aksaray.

The third type of brick muqarnas consists of the muqarnas hoods at the top of niches. There are shallow muqarnas hoods, at the top of the flanking shallow niches, on the four facets of the Melik Gazi tomb in Pinarbaşı, 70km east of Kayseri. In addition, there is a pair of muqarnas-topped niches in the east and west walls of the north iwan of the hospital in Sivas, founded in 614/1217-18 by the Rūm Saljūq sultan ‘Izz al-

⁵⁸ See chapter two, pp.126-145 for a detailed analysis of the Sivas Great Mosque minaret.

Dīn Kay Kāwūs I.⁵⁹ It is a diverse, if small, corpus consisting of deep and shallow cells of both angular and curvilinear form in single tier, and multi-tier compositions. Although the primary material under discussion is brick, there are a number of other materials involved in the construction process. There is lime or gypsum-based mortar used to bond the bricks together and affix the glazed elements, while the muqarnas brackets at the Kılıç Arslān II palace kiosk in Konya are reinforced by large timber beams. With the exception of the Melik Gazi tomb in Pinarbaşı, and the Konya palace brackets, the surviving examples of brick muqarnas feature glazed intarsia, either flat turquoise tiles of varying shapes, or green and turquoise glazed bowls set into the mortar bed.

Kılıç Arslān II palace kiosk in Konya

The brackets which supported the balcony of the kiosk of the palace, built into the pre-existing citadel wall in the second half of the 6th/12th century,⁶⁰ consist of six projecting rows of cells. Two of the surviving examples have a similar overall form, but are made up of different combinations of cells (fig. 3.20 and table 3.2). The north, east and west facets of the tower featured three brackets each, one at each end and one in the middle. A photograph taken by Gertrude Bell in 1905 shows the structure in a far better state of preservation (fig. 3.19). There were a further two similar brackets on the ends of the north face of the second floor, to support the overhanging eaves of the roof. The lower portion of the tower, up to the start of the arching brick work and around the brackets, was plastered and painted with red geometric patterns in the fresco technique, of which fragments still remain (fig. 3.20).⁶¹ The structure was published in a monograph by Sarre in 1936, but much of the research, including a number of the photographs featured in *Der Kiosk von*

⁵⁹ See analysis of the north iwan muqarnas niches at the 'Izz al-Dīn hospital, Sivas in chapter four, pp.309-14.

⁶⁰ Walker (2011), p.80 states that although there is no exact date the patronage is securely anchored in the reign of Kılıç Arslān II, who ruled from c.1156–1192 CE. Kuniholm (2004), p.140 gives a date of 1174 CE based on dendrochronological analysis of wood samples taken from the structure.

⁶¹ Arık, R. (2008), p.228 states that the walls of the tower are 2.5m thick.

Konia, date to Sarre's first trip to Konya in 1895, the preliminary results of which were published in his *Reise in Kleinasien* in 1896.⁶²

The structural support of the muqarnas brackets is provided by large cantilevered beams that are braced by a smaller beam, sitting in a V-notch on the bottom of the cantilever beam. This acted as an internal support and a matrix for the brick muqarnas to be built around. Due to losses to the structure, it can be seen that there are two cantilever beams side by side, but slightly apart, retaining their original round form in the north bracket (fig. 3.20), but squared-off at the top and bottom in the south bracket.⁶³ A number of the rising joints of the bricks of the muqarnas cells, and the decorative brickwork above the brackets, have had the mortar excavated to enliven the appearance. This decorative technique is employed across structural typologies and can be found on the muqarnas of the Melik Gazi tomb in Pınarbaşı and the Bekar Sultan tomb in Gülağaç.

The Konya palace brackets are evidence of the presence of craftsmen with the technical ability to create brick muqarnas with significant horizontal projection, as well as evidence of their use on a royal building. The 6th/12th century use of muqarnas in the context of royal structures is not a phenomenon reserved for Saljūq, or even Islamic architecture. The ceilings of the Norman Capella Palatina in Palermo, and the (lost) Mouchroutas audience hall in the Byzantine palace in Constantinople,⁶⁴ also made use of muqarnas in a royal context. These indicate the prestige associated with the form in 6th/12th century courtly circles, that transcended cultural and religious boundaries.

A number of symbols associated with royal power were employed on the exterior and interior of the Kılıç Arslān II kiosk in Konya. The presence of such a range of highly visible innovative and decorative elements, along with the overtly Iranian

⁶² See Pancaroğlu (2011), pp. 399-415 for a study of the importance of Sarre's *Reise in Kleinasien*.

⁶³ The use of an internal wood support structure can also be seen at the Melik Sunullah mosque minaret near Malatya, which has fragmentary remains of a single row of muqarnas with a band of square green glazed intarsia below. See appendix 2.7.

⁶⁴ See Walker (2011), pp.80-84 for analysis of a contemporary written description of the lost structure. On p.80 the author suggests that the Byzantine building was modelled on the Konya kiosk, and constructed around the time of the visit of Sultan Kılıç Arslān II to the Byzantine court in 1161 CE. The Palermo muqarnas are in wood as, most likely, were the ones in Constantinople.

form of the structure, can be used to interpret the message which the dynasty under Kılıç Arslān II wished to project. The structure is neither inward-looking nor private and demonstrates the use of Persian modes of architectural expression in Anatolia from the latter part of the 6th/12th century onwards. The large covered balcony on three sides which overlooks the north of the city suggests that the structure may have acted as a public stage for the sultan.



Fig. 3.19 – Kılıç Arslān II kiosk, Konya (c. 569/1174), photo by Gertrude Bell (May 1905)⁶⁵

⁶⁵ Image source: <http://www.gerty.ncl.ac.uk/photos.php>, image D_098 (accessed 11/04/2014).



Fig. 3.20 – Kılıç Arslan II kiosk, Konya (c. 569/1174); muqarnas brackets © R. McClary

Konya South bracket (left)		Konya North bracket (right)	
Row	Cell Type	Row	Cell Type
6/	2x wide triangle (at 45°) with central open rhombus	6/	2x rhombus (facing in) with central open rhombus
5/	2x wide triangle (at 45°) with central open rhombus	5/	3x triangle (central one recessed)
4/	2x rhombus (facing out) with central open rhombus	4/	2x rhombus (facing out)
3/	2x rhombus (facing out) with central open rhombus	3/	2x rhombus (facing in) with central open rhombus
2/	1x triangle	2/	2x rhombus (facing out)
1/	2x blind shouldered arch panels	1/	1x triangle flanked by blind shouldered arch panels

Table 3.2 – Kılıç Arslan II kiosk, Konya (c.569/1174); muqarnas cell forms

Bekar Sultan tomb, Gülağaç (Aksaray)

The Bekar Sultan tomb near Gülağaç in Aksaray province is an octagonal tomb,⁶⁶ the base and most of the shaft of which are stone, with the upper section of the shaft, the muqarnas band and the roof constructed of baked brick. There is also glazed turquoise intarsia in guard bands above and below the two bands of muqarnas. The muqarnas consist of two tiers, with the lower tier alternating between blank panels

⁶⁶ See appendix 2.2 and Önköl (1996), pp.142-145 for more information on the tomb.

and triangle-plan cells. The upper cells are tripartite, with the exception of the eight corner cells, which are bipartite rhombus-plan cells (fig. 3.21). All the rising joints, except those which touch the small square bricks forming the outline of the cells, have deep voids that appear black against the baked brick and enliven the appearance of the composition.

The form and function of the muqarnas can be related to those of the ones used on the minarets in both Sivas and Aksaray. In each case the muqarnas cornice increases the surface area above a shaft, in order to provide a larger platform for the upper section of the building. The functional role of the Bekar Sultan tomb cornice is to increase the size of the roof in order to shed water run-off away from the walls of the tomb, and thus reduce erosion of the brick Kufic band of epigraphy below.

This structure, like the Sivas hospital, is constructed from a variety of media. Such combinations of methods and materials demonstrates the dynamic process of architectural synthesis that was taking place in Anatolia in the early 7th/13th century, as craftsmen with different cultural backgrounds and architectural traditions, both Muslim and Christian, worked together to create a new architectural aesthetic.

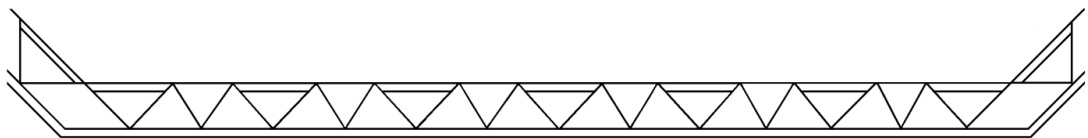


Fig. 3.21 – Bekar Sultan tomb, Gülağaç (c. late 6th/12th c.); muqarnas band and plan
© R. McClary

Eğri Minaret, Aksaray

In addition to the band of muqarnas at the top of the shaft of the Sivas Great Mosque minaret, discussed above, there is a band at the later Eğri minaret, in the centre of Aksaray.⁶⁷ It was constructed during the reign of sultan ‘Alā’ al-Dīn Kay Qubādh I (616-634/1219-1237), and was attached to the north-west corner of a now lost mosque. The corbelling of the balcony is achieved via the use of two bands of muqarnas at the top of the shaft. The lower band consists of ten alternating wide, blind shallow recessed pointed arches, interspaced with ten pairs of triangle-plan cells forming a flat front, to support a slightly wider single triangle-plan cell in the band above. The cells and panels feature a wide variety of patterns consisting of vertical and horizontal bricks, along with fragmentary remains of recessed turquoise glazed intarsia. The ten recesses between the single cells in the second tier consist of large tripartite cells with a pentagonal plan. There are extensive losses, but the single cells in the upper row include both square and rectangular glazed intarsia, one of which has a checkerboard pattern. The curved upper section of the projecting single cells feature inset glazed bowls of a kind similar to the ones in a band around the bottom of the muqarnas of the Sivas minaret. Above the two bands of cells the alternating wide-V and narrow-V-shaped plan of the muqarnas continues up five courses of bricks, before the cylindrical balcony section starts (fig. 3.22).

The muqarnas of the Eğri minaret, in particular the upper band, reveal a number of variations and inconsistencies from the idealised plan as shown in fig. 3.23. The irregularities in both the width of the cells and their alignment from one course of bricks to the next, are most likely caused by the need to adapt the design to deviations from true in the curvature of the shaft upon which they are built. However, the problem of accessibility makes proving this through accurate measurement difficult. The plans of the balconies of the Sivas and the Aksaray minarets are stellate (figs. 2.90 and 3.23) and it may be the case that there is a link to the stellate plans of eastern minarets such as the Ghaznavid minaret of Mas‘ūd III at Ghazna of 492/1099 – 508/1115 and the Ghūrid Quṭb Minār at Delhi, the lower

⁶⁷ For more details of the minaret see appendix 2.9.

section of which was completed by 598/1202.⁶⁸ The muqarnas cells in the niches in the east and west walls of the north iwan of the ‘Izz al-Dīn Kay Kāwūs I hospital in Sivas (614/1217-18), analysed in detail in chapter four, are similar to those used on the nearby Great Mosque minaret, as well as the tripartite cells of the Eğri minaret.



Fig. 3.22 – Eğıri minaret, Aksaray (616-34/1220-37); muqarnas © R. McClary

⁶⁸ Pinder-Wilson (2001), pp.172-173 suggests that the form is derived from stellate-planned tomb towers such as the Gunbad-i Qābūs. The tripartite knotted Kufic epigraphy on the shaft of the Sivas minaret, and the façade of the tomb of ‘Izz al-Dīn Kay Kāwūs I can also be seen on the south-east portal of the Ghūrīd Friday Mosque in Herāt of 1201 CE. The use of star plans in a minaret context, along with similar epigraphic styles, points to stylistic connections between the architecture of the Rūm Saljūqs and the Ghūrīds which require further investigation.

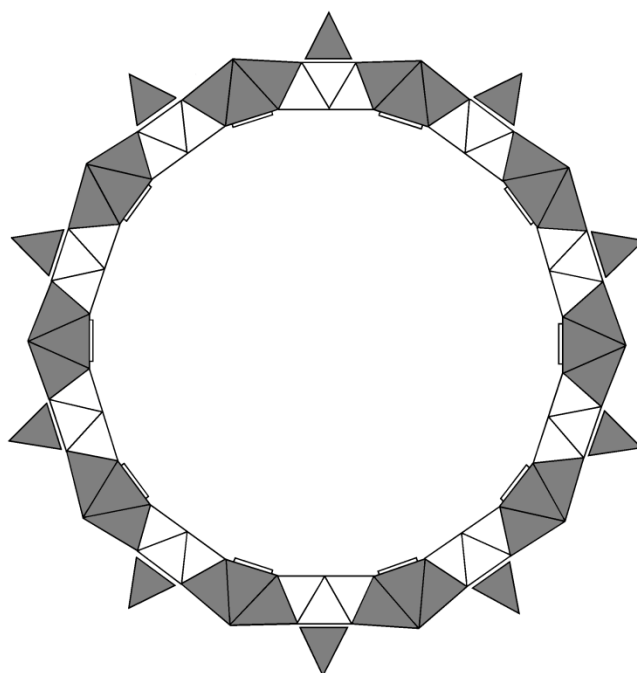


Fig. 3.23 – Eğri minaret, Aksaray; muqarnas plan (tier 1 white, tier 2 grey) © R. McClary

Although they date from beyond the scope of this study, in order to complete the corpus, a brief discussion of what appear to be the last examples of brick muqarnas in Anatolia follows. There are examples which are mostly plaster, but with some baked brick intarsia, at the top of the two gadrooned minarets of the Çifte Minareli madrasa in Erzurum (*c.*640/1242).⁶⁹ The surviving examples are fragmentary (fig. 3.24) and have the angular form of the cells seen at the top of the Mu'mina Khātūn tomb in Nakhchivān, as well as the ones supporting the balcony of the Kesik Minare mosque minaret in Aksaray (fig. 4.77). The cells in Erzurum are almost entirely glazed, primarily in turquoise, along with cobalt blue intarsia, and the decoration consists of patterns that are similar to the unglazed ones on the cells of the earlier minaret in Sivas.⁷⁰

There were at least three tiers, with most of the first, little of the second and virtually none of the third remaining. The composition has a rather more dynamic appearance than some of the earlier minarets, as a result of the increased colour and the ribbed form of the shafts from which they spring. The first row consists of cells that

⁶⁹ Rogers (1975), p.13. Blessing (2014)b, p.124 argues for a date between 1280-1300 CE.

⁷⁰ See chapter two, pp.126-145.

alternate between pairs of triangle-plan cells over the ribs, and single rhombus-plan cells in the recesses between the ribs. The two triangular cells support a single wide rhombus-plan cell in the row above. The muqarnas cells probably date from near the end of the construction process as the minarets are likely to have been among the last things built. The building project may have lasted up to ten years, and is thought to have ended, with the structure almost but not entirely completed, before the military defeat of the Rūm Saljūqs at the hands of the Mongols at Köse Dağ.⁷¹



Fig. 3.24 – Çifte Minareli madrasa minaret, Erzurum (c. 640/1242); balcony muqarnas
© Patricia Blessing 2008

Melik Gazi tomb, Pinarbaşı (Kayseri)

There are very few surviving examples of brick muqarnas niches. There is a pair in the north iwan of the ‘Izz al-Dīn hospital in Sivas (analysed in chapter four), the shallow external ones at Pinarbaşı and the later brick delineated *mihrāb* in the Akşehir Great Mosque, discussed below.

The Melik Gazi tomb, although lacking secure epigraphic dating, has been attributed, on stylistic grounds, to the end of the 6th/12th century.⁷² Elements of the tomb, including the square form, tripartite decoration and crude, shallow muqarnas can be compared to the Pīr Mausoleum at Tākistān, near Qazvīn in Iran, built in the late

⁷¹ Rogers (1975), p.13 argues that the scale of the building, combined with the short building season in the region due to the harsh winters, would have resulted in the project lasting up to ten years.

⁷² Önkal (1996), p.234. For details of the rest of the tomb see appendix 2.1.

6th/12th century.⁷³ The muqarnas cells are entirely decorative, with the effect of articulating the four sides of the structure, in conjunction with the use of decorative brick bonds and voids in the rising mortar joints. There are two muqarnas compositions on each of the four sides of the building at the top of the tall, shallow recess panels. The muqarnas cells are perhaps the closest thing to external muqarnas hoods in brick to be found in Anatolia, with each hood consisting of four courses of cells.⁷⁴ The bottom course has five cells, the next four, then three, with the top being a single cell without the same degree of depth as all the others, and each row of cells consisting of three courses of bricks. The cells consist of a flat back panel made of a full brick on top and bottom with two small square bricks with a void rising joint in the middle. This deep gap gives a further sense of depth to the cells. The sides are formed from bricks projecting at 45 degrees to the back panel, a short one at the bottom, with twice the projection for the second course of bricks. The roof of the cell is formed from the use of two triangular bricks that meet at their compound mitred tips (fig. 3.25). The unrepaired spandrels around the muqarnas also feature deep wide voids in the rising joints of the brickwork. When compared with other brick muqarnas of the period, these ones have a rather crude angular appearance but viewed from afar the visual effect is similar to the more accomplished examples.

The surviving examples of non-lithic muqarnas from the second half of the 7th/13th century are constructed of plaster with glazed intarsia, rather than brick-built, and are generally used in *mihrāb* niches.⁷⁵ Glazed *mihrābs*, predominantly in turquoise with purple or black mosaic detail, can be found across the region but they were particularly prevalent in Konya.

⁷³ Daneshvari (1977), p.152 suggests the structure dates from the latter part of the 6th/12th century, rejecting the date of c. 1100 suggested in Hillenbrand (1972), p.53. See *ibid.*, pl.III for a detail of the muqarnas which shows just how similar the construction methods are at both structures. Indeed Hillenbrand (1976), p.100 calls the shallow brick muqarnas niche a hallmark of the Qazvīn style.

⁷⁴ The upper rows of all the muqarnas niches have been repaired, but enough of the original structure remains to allow for an understanding of their original form.

⁷⁵ See Arik (2008), pp.138-183 for a number of examples across Anatolia from the mid-7th/13th to 8th/14th centuries. There are fragmentary remains of larger-scale plaster and glazed tile muqarnas in the entrance iwan of the Sirçalı madrasa in Konya (c.1242 CE), see *ibid.*, p.75, fig.39.

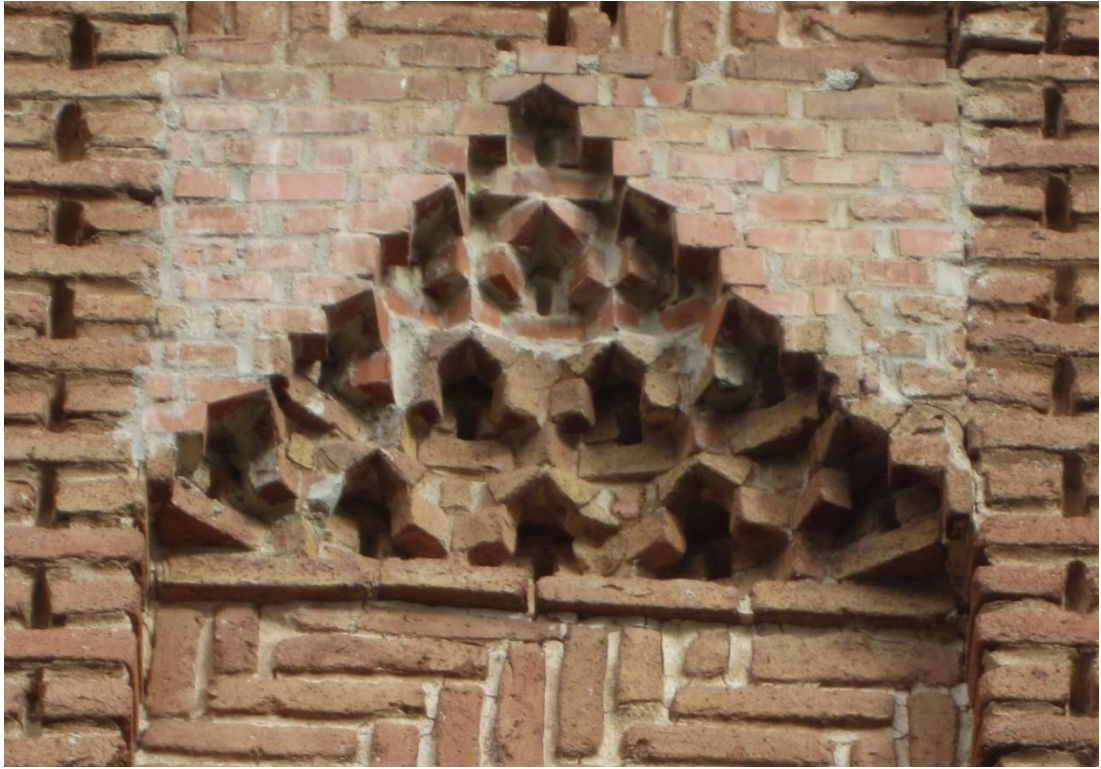


Fig. 3.25 – Melik Gazi tomb, Pinarbaşı (c. late 6th/12th c.); muqarnas niche © R. McClary

A transitional structure between the brick niches in the Sivas hospital and the later glazed tile-clad plaster *mihrābs*, can be found in the *mihrāb* of the Akşehir Great Mosque (fig. 3.26). The mosque was built in 607/1210⁷⁶ and was extensively remodelled during the reign of ‘Alā’ al-Dīn (616/1220-634/1237). The *mihrāb*, which has far more white than turquoise in comparison with the later structures appears, stylistically, to date from the later period of remodelling. The five rows of cells, although presumably formed from plaster, are delineated with baked bricks in the manner of the band of muqarnas around the shaft of the Great Mosque minaret in Sivas. In addition, the cells are decorated with glazed intarsia similar to those in the Sivas hospital niches and Great Mosque minaret band.

There are two framing bands, with the outer one being a band of pseudo-Kufic, and the same addorsed *hastae* tips as seen in the Sivas tomb façade.⁷⁷ The *mihrāb* features epigraphy over the top of the niche and above the five panels of the niche below the muqarnas. The spandrels are decorated with roughly hexagonal geometric

⁷⁶ Meinecke (1976), Vol. 2, p.24.

⁷⁷ See chapter four, pp.351-360.

patterns, each complete repeat of which consists of three repeats of the name 'Alī in Kufic.⁷⁸



Fig. 3.26 – Akşehir Great Mosque *mihrāb* (c. 616/1220 - 634/1237) © R. McClary

⁷⁸ Arık (2008), pp.45-6 describes the patterns as stylised goose feet, and notes the epigraphic reading of the tile mosaic.



Fig. 3.27 – Great Mosque, Malatya (645/1247); large structural brick muqarnas cells in *maqṣūra* dome squinches © R. McClary



Fig. 3.28 – Malatya Great Mosque, Malatya; muqarnas cornice at the springing of the main iwan arch © R. McClary

What may be the last example of brick muqarnas in Anatolia can be seen at the Malatya Great Mosque (645/1247).⁷⁹ The building features large structural muqarnas cells forming the lower section of the squinches of the *maqṣūra* dome (fig. 3.27). These are similar to the style of dome support used across greater Iran, with examples to be found in the Great Mosques in Iṣfahān and Qazvīn. The Malatya dome appears to be the only example of this type of brick muqarnas dome support to survive in Anatolia. In addition to the structural muqarnas there are two short sections of muqarnas cornice at the springing of the main iwan arch which gives access to the area under the dome (fig. 3.28). The cornices consist of two rows of angular cells, and have a similar appearance to the muqarnas band around the shafts of the minarets of the Çifte Minareli madrasa in Erzurum. The simple cells are formed from cut baked bricks, in a similar manner to those at Pinarbaşı, but they are enlivened with the use of glazed tiles all around them. The execution of a muqarnas cornice in brick is quite unusual, as it is a motif more commonly seen in stone, generally located over the flanking niches of portals.⁸⁰

Brick muqarnas: conclusion

The direct transfer of construction techniques from Iran to Anatolia through the movement of individuals was caused by the dual needs of both the craftsmen and the patrons. The collapse of the Great Saljūqs, after the death of sultan Toghrīl III in 590/1194,⁸¹ led to political instability and war in Iran.⁸² There was a concomitant decline in architectural patronage, resulting in many craftsmen needing to move in order to find work. As a result of the collapse of the Great Saljūqs, the Anatolian branch of the Saljūqs appear to have sought to establish themselves as the rightful heirs to imperial prestige. The Rūm Saljūq court acquired an increasingly Persianate nature,⁸³ and both sultan Ghiyāth al-Dīn Kay Khusraw I and his son ‘Izz al-Dīn Kay

⁷⁹ Arik (2008), pp.73-74 tentatively accepts the earlier of the two dates on the building as indicating the main phase of construction, done in brick with glazed tile decoration, but suggests that it may be as early as the reign of ‘Izz al-Dīn Kay Kāwūs I. The later date, 1274 CE, appears to be the date of restoration, primarily executed in stone. Stylistically, the first half of the 7th/13th century is more likely. See also Meinecke (1976), pp.390-400.

⁸⁰ See chapter two, especially pp.55-59.

⁸¹ Bosworth (1996), p.186.

⁸² Yıldız (2013), p.94.

⁸³ Mecit (2011), pp.69-70 argues that this change was due, in part, to the influence of the increasing number of Persian administrators and craftsmen entering the sultanate. Redford

Kāwūs I adopted an imperialist policy of expansionism in the early decades of the 7th/13th century. It was during the rule of these two sultans, in particular, that a number of the brick buildings in the Persianate manner were constructed. In much the same way as scholars such as Muḥammad ibn ‘Alī Rāwandī sought the patronage of the Rūm Saljūqs⁸⁴ following the collapse of the Great Saljūq state in 590/1194, so did numerous administrators and craftsmen. Whether consciously on the part of the individuals or not, the effect of this process of movement of skilled labour was the introduction of a number of the characteristic aspects of Great Saljūq culture to Anatolia. As the examples of brick muqarnas demonstrate, this process of cultural transfer included specific elements of the architectural decoration that had developed in the Greater Iranian region. The use of brick muqarnas, with or without glazed intarsia, did not continue past the military defeat and subsequent political side-lining of the Saljūq sultans by the Mongols, after the Battle of Köse Dağ, near Erzincan, in 641/1243.⁸⁵ In the final reckoning, brick muqarnas can be seen as an offshoot of Iranian architecture which was planted, flowered briefly, but never truly took root in Anatolia. The reasons for this remain unclear, but it is likely to have been due to the increasing preference for glazed decoration over unglazed brick in the second half of the 7th/13th century across Anatolia.

Sectional baked earth hydraulic pipes

Alongside the decorative and structural bricks, the same basic baked earth ingredients were used for the body of glazed tiles (addressed below) and sectional water pipes used for a variety of hydraulic purposes. Due to their internal or underground location, it is only damage to buildings or archaeological excavations which allows them to be seen. Extensive damage to the dome of the Külük hamam in Kayseri (c. late 6th/12th century)⁸⁶ has revealed vertically set drainage pipes that appear to have been for the removal of rainwater from the dome (fig. 3.29). The

(1993), pp.154-155 cites the use of the names of Persian kings and the use of Persian epic poetry on the walls of Konya as evidence of the Persianate nature of the Rūm Saljūq dynasty.

⁸⁴ Yıldız (2013), p.102.

⁸⁵ The reasons for this remain unclear, as several brick structures with increased use of glazed decoration, such as the minarets of the Gök Madrasa in Sivas (670/1271-2), were built after 641/1243.

⁸⁶ The building is poorly published, but appears to date from the same period as the nearby Dānishmendid era Külük mosque. Yurdakul (1996), pp.4-7 briefly discusses the hamam and includes three images.

standard form of the pipe sections is based on a form employed in hydraulic systems in Roman architecture, with one end narrower than the other, allowing for the creation of a versatile and easily replicable modular system capable of forming a watertight seal. The more common location, as revealed in the excavations of the building that was on the site of the Çifte Minareli madrasa in Sivas (670/1271-2), was to run horizontally under the floor of buildings. Excavated sections of such pipes can be seen in the Taş Müzesi (Stone Museum) in Konya (fig. 3.29). Smaller diameter holes show where taps or other fittings may have been inserted, and there is a general consistency to the form and scale of the various excavated and *in situ* examples across the region.⁸⁷

In addition to the baked bricks discussed above, it must be noted that a large number of contemporary structures, particularly vernacular ones, were built with unbaked mud bricks. The evidence for these structures may be found in the archaeological record. Excavations in Gritille, south of Malatya, have revealed the presence of mud brick walls as well as stone walls with a skin of mud bricks.⁸⁸ The poor resistance to rainfall of unbaked brick is likely to have limited their use in the northern and central regions for anything other than the most temporary and ephemeral structures.

⁸⁷ An excavated example from the hospital of 'Izz al-Dīn in Sivas measures 395mm in length.

⁸⁸ See Redford (1998), p.38, fig.2:5 and p.39; and pp.68-76 shows that mud bricks were used widely across the drier southern regions of Anatolia.



Fig. 3.29 – Water pipe sections in Konya Museum (L) and Külük Hamam, Kayseri (R)
© R. McClary

GLAZE

The technology used to create the glazes for the brick and tile intarsia used in Anatolia was developed primarily in Iran during Saljūq rule.⁸⁹ The most common colour of glaze is turquoise and it has three basic constituents. The main body consists of an alkaline glass frit made with quartz, flint and potash derived from burned salt plants.⁹⁰ The turquoise colour is due to the addition of copper oxide to a lead oxide glaze.⁹¹ For cobalt blue, the lead oxide was replaced by an alkaline glaze made of powdered pebbles and potash. In both cases, a borax flux is used to reduce the melting point of the glaze.⁹² In addition, there are several examples of black underglaze decoration, achieved through the use of chromite.⁹³ The only detailed contemporary account of tile-making (*kāshī-garī*) techniques is the treatise describing the Kāshān style, by Abū'l-Qāsim, with the earliest manuscript dated 700/1301.⁹⁴

There was fairly limited use of tiles in the 6th/12th century, with turquoise glazed bowls often being used instead of tiles.⁹⁵ Examples can be seen over the entrance to the Mengücek Gazi tomb in Kemah (c. 586/1190) and in the guard bands on either side of the epigraphic band at the top of the shaft of the Bekar Sultan tomb in Gülağaç (c. late 6th/12th century). In the early 7th/13th century, monochrome tiles become increasingly popular for the decoration of minarets, both on the panels of the

⁸⁹ See Pickett (1997), pp.21-33 for an overview of the introduction of *kāshī* to Iran, Appendix 1 on pp.163-66 for the earliest corpus and plates 1-27 for colour illustrations of some of the earliest examples.

⁹⁰ Wulff (1966), pp.160-62. According to Abū'l-Qāsim the best salt plant is the common soda plant *Chenopodiaceae Salsola Soda*, called *Ushnān* in Persian (Allan (1973), p.116. Davis (1967), p.330 states that it is a blue-green herb that grows in salty soil at sea level, primarily on the north-western and southern coasts of Anatolia. Meinecke (1976), p.156 gives the glazed tile composition of 7th/13th century tiles to be; 83.6-90% Sand (SiO₂), 8.5-2.5% Alum (AlO₃), 2.4-4.3% Calcium (CaO) and 2.3-1.8% Alkaline (potash).

⁹¹ Wulff (1966), p.147. Allan (1973), p.118 indicates that for a uniform turquoise colour, tin oxide was also added in Kāshān in the 7th/13th century. Bozer (2008), p.210 states that the tin oxide adds opacity to the appearance of the glaze by separating into small particles which greatly reduce the passage of light.

⁹² Wulff (1966), pp.146-7.

⁹³ Bozer (2008), p.210. Chromite is a naturally occurring mineral rich in chromium.

⁹⁴ Allan (1973), pp.111-120 gives a full translation of the Persian text along with a commentary on the methods of mixing the ceramic body and making the glazes.

⁹⁵ Arık (2008) p.39 states that the restoration of the Yağribasan madrasa, built in Tokat in the mid-6th/12th century, has revealed a section of hexagonal turquoise tile dado revetment. The author assumes they are contemporary with the structure rather than later, indicating that there may have been a wider use of tile in the 6th/12th century than was previously thought.

zone of transition and on the shaft. The earliest surviving cobalt blue monochrome tiles appear to be the half-cross ones set with turquoise eight-pointed star tiles in a band, in facets of the octagonal section of the Akşehir Great Mosque minaret (609/1213). It is not entirely clear why turquoise was the predominant colour used for the early glazed tiles and bricks in both Greater Iran and Anatolia. The connotations with the sky, and by extension Allāh and light, may have played a part, but the more prosaic aspect of relative ease and cost of production are the most likely explanations. Given the need for large numbers of tiles and tonal consistency, the fact that turquoise glazed wares were the pottery of common use, being inexpensive and produced in a large number of sites, it makes sense that turquoise was the most common colour employed in architectural revetment as well.⁹⁶ The technique of tile mosaic is more complex, and involved the arrangement of cut glazed tiles face down, after which gypsum mortar was poured over them to keep them in place. The panels were then installed in place. Early examples of the technique can be seen on the base of the Sivas Great Mosque minaret and over the door and windows of the façade of the tomb of ‘Izz al-Dīn Kay Kāwūs I in Sivas.⁹⁷

The tiles produced in Beyşehir in c.632/1235 for the royal palace complex have been shown by scientific analysis to have been produced with sedimentary clay from the shores of the nearby lake, with quartzitic sand added to prevent deforming. After the application of underglaze paint and a clear glaze, the tiles were fired to between 950° and 1000° Celsius.⁹⁸ The most common form of glazed decoration during the Rūm Saljūq period was glazed brick, where one face of a brick is glazed, usually with turquoise.⁹⁹ Close visual analysis of a fragment of a turquoise glazed tile from the collapsed Çifte Minareli madrasa in Sivas (670/1271-2) shows a light coloured stone paste body with a high sand content that has clearly visible porosity. There is a very thin and consistent layer of copper oxide glaze (fig. 3.30).

⁹⁶ Tonghini (1998), p.70 adds that the turquoise monochrome wares were not particularly sophisticated and were cheaper and inferior to other glazed table wares.

⁹⁷ The use of tile mosaic over large areas of structural brickwork is a phenomenon of the second half of the 7th/13th century, with one of the finest examples being the interior of the Büyük Karatay madrasa in Konya.

⁹⁸ Arık (2007), p.496. The firing temperature was determined by archaeometric analysis of samples.

⁹⁹ Yardımcı (2013), p.43.

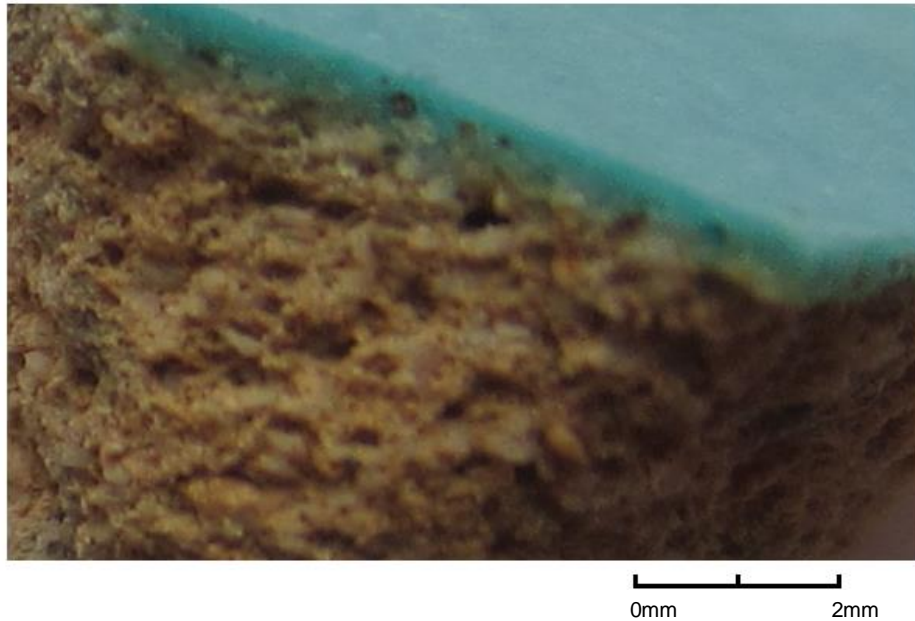


Fig. 3.30 – Frit body and copper oxide glaze detail of tile fragment from Çifte Minareli madrasa, Sivas (670/1271-2) © R.McClary

***Minā'ī*, Kāshān and the Konya kiosk**

The period of study saw the expansion of the use of glazed tiles from the secular palatial context, with the Kılıç Arslān II kiosk in Konya being the earliest surviving example, onto a wider range of structures.¹⁰⁰ These included the exterior of tombs and minarets, as well as the interior of madrasas and mosques, especially the *mihrāb* area, in the latter half of the 7th/13th century. This process saw a diversification from the star and cross tiles, with the star often featuring figural decoration executed in the *minā'ī* style with gilded surface decoration (fig. 3.31).¹⁰¹ The illustrated examples are in the miniature style, which was developed primarily for *minā'ī* work.¹⁰² It was a very short-lived technique, with dated examples extending only over the years 576-

¹⁰⁰ Walker (2011), pp.80-82. Akurgal (1980), p.94 cites the (notoriously unreliable, but in this case probably accurate) account of the Ottoman traveller Evliya Çelebi who wrote that it was covered with ceramic tiles inside and out. Walker (2012), p.147 describes the kiosk as “the earliest preserved Saljūq building decorated with Islamic tiles”.

¹⁰¹ Watson (2004), pp.363-364 gives a good overview of the technique. He states that it is closely related to the methods employed in lustre production. The blue, turquoise, and purple are painted onto the opaque white glaze before firing, then the enamel (powdered coloured glass) is painted on the fired vessel. These colours, along with any gold leaf, are fixed in a second low temperature firing. Locally produced figural star and cross tiles were still employed on palaces, such as the ones at Aspendos and Beyşehir under ‘Alā’ al-Dīn, but not on the religious structures, of which more survive.

¹⁰² Watson (1985), p.70.

616/1180-1219.¹⁰³ The surviving examples feature cobalt blue, turquoise or white initial glazes, with red and gold leaf added for the second firing. The combinations of shapes include six-pointed stars with kite-shaped segments, and cross-shaped tiles with the eight-pointed stars that fit with them. Fig. 3.31 A depicts a tile from the Kılıç Arslān II kiosk in Konya, which features a horse and rider on a white ground, that is similar in style to a bowl (dated 583/1187) in the British Museum, particularly in regard to the treatment of the head area.¹⁰⁴ The royal nature of the mounted figure with a nimbus becomes clearer when compared with Rūm Saljūq copper and silver *dirham* coins of the period, several of which feature the same motif on the obverse. The rider is depicted both with, and without, a nimbus.¹⁰⁵ The decoration of the star tiles in fig. 3.31 B is figural, with the larger fragment, measuring 8.8cm wide x 6.5cm high¹⁰⁶ appearing to depict an enthroned ruler and attendants on a turquoise ground. There is currently no evidence that *minā'ī* ceramics were produced anywhere other than Kāshān,¹⁰⁷ so it may be assumed that the tiles which were affixed to the Konya kiosk were all imported from Kāshān. There is dendrochronological evidence which dates the Kiosk to 1174 CE,¹⁰⁸ while the palace of 'Alā' al-Dīn Kay Qubādh I, built in 632/1235 at Beyşehir, does not feature any *minā'ī* tiles, and the tiles used there were produced on-site.¹⁰⁹ Given the short period of production of *minā'ī* wares, it must be presumed that the tiles from the kiosk in Konya date from the initial phase of construction, rather than from the time of any possible restoration under later rulers. This would make them among the earliest examples of *minā'ī* produced, while the similarity to the signed work of the potter Abū Zayd, and his apparent pioneering of the technique, indicates that he may well have been responsible for their

¹⁰³ Watson (2004), p.363.

¹⁰⁴ See Watson (1985), p.79, fig.51. On p.84 he states that the bowl is signed by the great potter Abū Zayd, and although it is one of his earliest works it is the early examples that are among his best. Blair (2008), p.156 states that his earliest signed work is dated 582/1186. The article is a biography of Abū Zayd.

¹⁰⁵ Bates and Darley-Doran (1985), pp.354 and 388, figs. 530 and 531. The coins, in copper (595/1198-9, with nimbus) and silver (596/1199-1200, without nimbus, minted in Kayseri) show a galloping horseman, and date from the reign of Sulaymān Shāh.

¹⁰⁶ Arik (2008) p.236. The tile is 1.6cm thick.

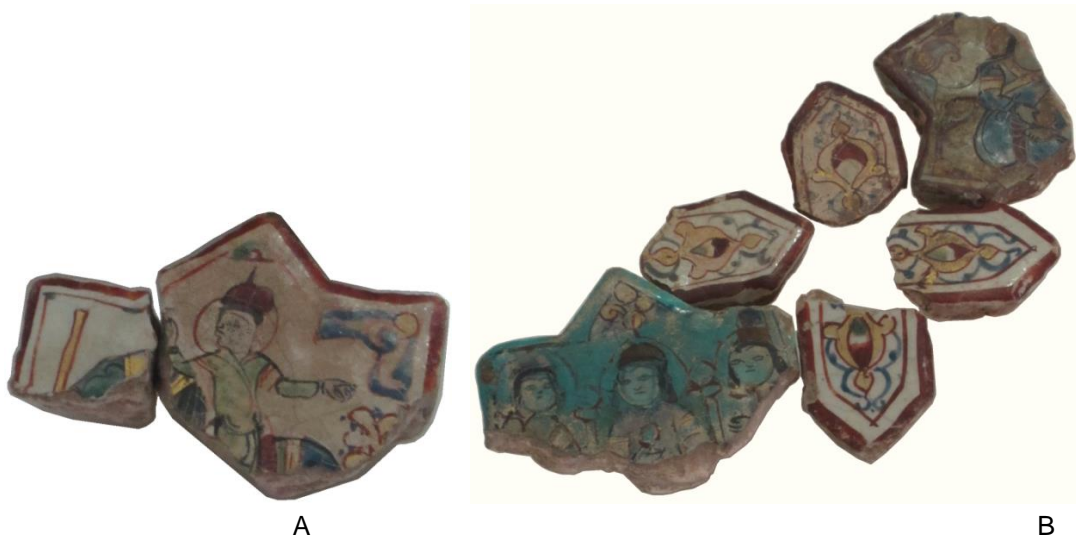
¹⁰⁷ Watson (2004), p.363.

¹⁰⁸ Kuniholm (2004), p.140. Arik (2008), p.230 states that three tested samples show that there is wood from trees that were cut down in 1167, 1173 and 1174. See p.343, note 157 below.

¹⁰⁹ See Arik (2007), pp.491 and 496. The results of the excavations of the site, by Professor Arik and others, can be seen on display at the Karatay Madrasa Museum in Konya.

production too.¹¹⁰ The presence of such tiles in Konya, albeit fragmentary in nature, gives an insight into just how wide a range of sources were utilised in the procurement process for the building of elite structures in the latter part of the 6th/12th century in Anatolia. From the early 7th/13th century onwards, there was an increased use of monochrome geometric tiles and cut tile epigraphic panels on religious structures.¹¹¹ There were also locally produced figural tiles on the palaces, at Beyşehir and Aspendos¹¹² for example, none of which are in the *minā'ī* style.¹¹³

The internal and external decoration of the kiosk is now widely distributed around the world. After the partial collapse of the kiosk in 1907, a large amount of the tile and stucco decoration from the kiosk was removed from the site and exported by Löytved (1874–1917), the German consular representative in Konya from 1904.¹¹⁴



¹¹⁰ Watson (2004), p.363 suggests rather equivocally that it was “perhaps” Abū Zayd who developed the fixing of coloured glass in a second firing in the manner of lustre work.

¹¹¹ See chapter two, pp.126-145 for the Great Mosque minaret in Sivas, and chapter four, pp.344-375 for the tomb of ‘Izz al-Dīn Kay Kāwūs I in Sivas.

¹¹² A number of star and cross tiles from Aspendos are on display at the Antalya Museum.

¹¹³ A large number of lustre tiles and tile fragments survive, indicating that the craftsmen had probably emigrated from Iran, possibly from the Kāshān area.

¹¹⁴ Pancaroğlu (2011), p.410. She states that dozens of pieces of stucco and tile were removed, with the Islamische Abteilung in Berlin acquiring a “sizeable quantity” from Löytved. For details of the career of Löytved and his activities in Konya. She recommends (*ibid.*, p.415) Yoltar-Yıldırım (2009), pp. 747-57. For an idea of the character and personality of Löytved, see Bell (1927), pp.219-20.



C

Fig. 3.31 – Kılıç Arslān II kiosk, Konya (c.569/1174); *minā'ī* tiles now in the Karatay Museum, Konya © R. McClary

One of the most complete sections of the tile revetment from the Konya kiosk consists of thirteen tiles. A six-pointed star with a sphinx is surrounded by six turquoise kite-shaped tiles and six blue lozenges, now in the Metropolitan Museum in New York (fig. 3.34).¹¹⁵



Fig. 3.32 – Kılıç Arslān II kiosk, Konya (c.569/1174); *minā'ī* tiles now in the Tiled Pavilion Museum, İstanbul © R. McClary

¹¹⁵ See <http://www.metmuseum.org/collections/search-the-collections/452817?img=2> (accessed 09/05/2014). The accession number 1976.245 and the entire panel measures 23.3cm wide x 23.5cm high.



Fig. 3.33 – Kılıç Arslān II kiosk, Konya (c.569/1174); *minā'ī* tile with figure playing the lute, now in the Museum für Islamische Kunst, Berlin¹¹⁶



Fig. 3.34 – Kılıç Arslān II kiosk, Konya (c.569/1174); *minā'ī* tiles © The Metropolitan Museum of Art, New York

¹¹⁶ The Image is a modified version of Walker (2011), p.80, fig.2.

There were also sections of the kiosk decorated with monochrome tiles. There were eight-pointed turquoise tiles, and manganese black cross tiles, with rectangular border tiles in both colours. In addition, bow-tie shaped tiles in blue and black have also been excavated (fig. 3.35 and 3.36).¹¹⁷



Fig. 3.35 – Kılıç Arslān II kiosk, Konya (c.569/1174); *minā'ī* and monochrome tiles (Karatay Museum, Konya) © R. McClary



Fig. 3.36 – Kılıç Arslān II kiosk, Konya (c.569/1174); monochrome tiles (Karatay Museum, Konya) © R. McClary

In addition to the interlocking *minā'ī* tiles, fragments of two larger square *minā'ī* tiles have been found. These tiles are thicker than the other ones, at 2cm, and have a grey body, rather than the yellow of most of the other tiles (fig. 3.38).¹¹⁸ They feature three red lines creating an octagon with figures in the middle, quarter octagons in each corner, and half a four-pointed star at the middle of each edge. A

¹¹⁷ A selection of monochrome tiles are on display in the Karatay Museum in Konya. See also Sarre (1936), pl.6.

¹¹⁸ The fragments are now in the Tiled Pavilion Museum in İstanbul, INV.41/1448, INV.41/1489, INV.41/1490, INV.41/1491 and INV.41/1492. See Sarre (1936), p.5 for other similar fragments that are held in Berlin.

reconstruction of the broader composition shows the geometrical pattern that was created (fig. 3.39). The original location of the tiles is unclear, but the north façade of the now missing upper floor had remains of square patterns of mortar lines. These are evidence of the wall around the arch having been covered with large square tiles of a similar dimension, and this may have been the original location of these tiles (fig. 3.37). The reason for the use of this style on the exterior, rather than the interlocking shapes employed inside, may be a result of an increased exposure to weathering. Perhaps less likely, given the sultanic patronage of the building, it may have been due to financial considerations, as the square tiles would be a cheaper way of covering a large area with a similar aesthetic, especially when viewed from a distance.

The exterior tiles featured mounted riders hunting and holding birds of prey. The interior ones featuring a sphinx and numerous examples of seated and mounted figures exhibit clear links to the style of the perhaps contemporary *Varqa va Gulshāh* manuscript, which also featured images of combat and mounted figures.¹¹⁹ Regarding the internal tiles, the issue of who the audience was must be addressed before any assertions can be made in regard to any supposed projection of royal power. It is not clear if the space was in any way public, or if it was entirely private. Given the type of decoration, it is likely that it was used for the reception of elite visitors, but this cannot be known with any certainty. Like the glazed tiles from the exterior of the kiosk, the coinage of Kılıç Arslān II also featured horsemen, with a surviving example being a worn bronze *fiş* now in the collection of the American Numismatic Society.¹²⁰ Architecture was just one facet through which the iconography of power was projected across society, along with public displays of court ceremonial and coinage, which featured both titular epigraphy and figural images. Such images were ubiquitous, and employed across a variety of materials and scales across the region.

The glazed-tile inscription around the edge of the upper story of the north façade of the kiosk was executed in white lettering on a blue background (fig. 3.37). It

¹¹⁹ Redford (1993), p.222.

¹²⁰ The coin, from the reign of Kılıç Arslān II, is 20mm across and weighs 3.116g. Accession number 1971.93.1.

consisted of royal titulature and, although several sections were missing, Löytved read it as follows:¹²¹

(R) ...شاهنشاه الاعظم سيد السلاطين العرب والعجم مجدد ممالك
(Top) الدنيا و مظهر كلمات الله العليا...الدين فخر السلاطين فى العالم نصير الحق
(L) بالبر(?) المظلومين من المظالمة ابو الفتح قلج ارسلان...

...shāhanshāh al-a‘ẓam sayyid al-salāṭīn al-‘arab wa’l-‘ajam mujaddid
mamālik al-dunyā wa muẓahhir kalimāt allāh al-‘ulyā...al-dīn fakhṛ al-
salāṭīn fī al-‘ālam nasīr al-ḥaqq bi’l-bar (?) al-maẓlūmīn min al-muẓālama
abū’l-faṭḥ Qilij Arslān...

*The great Shāhanshāh, master of the lords of the Arabs and the non-Arabs, renewer of the kingdoms of the earth and manifestor of the elevated Words of God... pride of the Sultāns on earth, the one who makes truth victorious [a phrase with words of the root ẓalama]¹²² the conqueror Qilij Arslān...*¹²³



Fig. 3.37 – Kılıç Arslān II kiosk, Konya (c.569/1174); upper north wall (after Sarre (1936), pl.4)

¹²¹ Konyalı (1965), p.182, citing Löytved, gives the Arabic text but no transliteration or translation. He notes the similarity to the tiled inscription on the nearby tomb of Kılıç Arslān II tomb and suggests that they may both have been by the same hand. Minor errors in the reading have been corrected. Löytved (1907), p.57 gives a German translation of the inscription.

¹²² Professor Paul Starkey (personal communication 20/02/2015) has suggested that the problematic section may be read as; *the one who frees the persecuted from the persecutors*.

¹²³ Translation by Dr. Alain George.



Fig. 3.38 – Kılıç Arslān II kiosk, Konya (c.569/1174); – fragments of square *minā'ī* tiles (Tiled Pavilion Museum, İstanbul) © R.McClary



Fig. 3.39 – Kılıç Arslān II kiosk, Konya (c.569/1174); broader geometric composition of square tiles (after Bozer (2008), p.193)

Tile production and imports

There is very little archaeological evidence upon which to form an understanding of the working methods of tile makers, or indeed any craftsmen, in the early 7th/13th century, but one small three-roomed rectangular workshop has been excavated at the Beyşehir palace site. Located to the south of the complex, it was found to contain

blacksmith's tools, wasters, ash and glaze slag, along with the remains of forges, a kiln and a lime store.¹²⁴ This rare example of an industrial workshop on site can be used as firm evidence for the presence of itinerant masters working in temporary workshops on major construction projects in the early part of the 7th/13th century.¹²⁵ The use of limited numbers of bowls, as seen at Kemah and Divriği, or imported Kāshān tiles at Konya in the 6th/12th century, indicates that this was not the case in the early period, and that importation was likely to be the only way of sourcing glazed elements.

¹²⁴ Arık (2007), pp.496-497.

¹²⁵ *Ibid.*, p.498.

MORTAR

Introduction

Mortar is of central importance to the construction process as it is the primary binding agent. It forms the matrix which holds the structural load-bearing components of brick and stone together. It is also the medium used for affixing glazed tiles to buildings. As a result, some of the processes associated with mortars and plasters have been discussed in the previous sections on brick and glazed elements. Fine grades of plaster were skimmed in multiple coats over both stone and brick sub-surfaces, in order to provide a smooth surface that could be then be painted or incised.

Mortar was an integral part of the decorative schema in the context of brick construction. This was achieved at the Melik Gazi tomb at Pinarbaşı by voiding some rising joints. Another technique was to incise patterns in the rising and bed joints between bricks, as seen in Kemah and Sivas,¹²⁶ while the most common effect resulted from the sheer regularity of the bond, and the resultant patterns of wide rising joints and narrow beds. A good example of this can be seen on the exterior of the shaft of the minaret of the Great Mosque in Sivas (figs. 2.72 and 2.75).

The lime for lime mortar¹²⁷ is produced by breaking limestone into lumps (although seashells may also be used)¹²⁸ and heating them in a kiln to a surface temperature of 1000 degrees Celsius. This leaves calcium oxide, called quicklime or unslaked lime. Slaking is the reaction of quicklime with water.¹²⁹ Lime mortar was the preferred type in Anatolia, and samples tested from the Hoca Hasan Mescid minaret in Konya (c. 7th/13th century) by Tunçoku and Caner-Saltik show that the content of lime

¹²⁶ The Mengücek Gazi tomb incisions are discussed below. The mortar patterns in the hospital founded by 'Izz al-Dīn in Sivas are analysed in chapter four.

¹²⁷ Tunçoku and Caner-Saltik (2006), p.1891 states that one of the advantages of lime-based mortar is its reaction with air. When fine cracks open up in the mortar they can reseal owing to the recrystallization of calcite on contact with air, which adds to the durability of the mortar.

¹²⁸ Caner (2003), p.5. Marble is not suitable, as the large grains form lumps of quicklime.

¹²⁹ Ashurst and Ashurst (1988), Vol. 3, pp.1-3. The effective temperature is 880 degrees Celsius at the centre, hence the need for a higher surface temperature. This drives off the carbon dioxide and water. The mix must be hoed, raked and stirred until the visible reaction is finished.

binder in the mortar was, on average, around 71 percent.¹³⁰ In addition to lime and water, mortar usually contains aggregates.¹³¹ There are two reasons for adding aggregates to mortar, one of which is to build up an internal framework to prevent cracking when the lime dries.¹³² River sand is commonly used in this role. The other reason is to form stable insoluble compounds with cementing properties. This is achieved by the addition of fillers or aggregates with silica, alumina and iron oxides, which react with lime at ordinary temperatures when water is added. Such aggregates, called pozzolanic aggregates, include volcanic dust, silica from flint, and opal, with opal being the most reactive. It is these aggregates which are the main cause of the durability of plaster and mortar.¹³³ Aggregates with rough surfaces provide a larger surface area, which gives higher strength and better adherence. The down side of this type of mortar is the increased difficulty in workability.¹³⁴ Stone mortars have been found to have a slightly higher density than brick mortars, and consequently the water absorption capacity and porosity are lower. Both types of mortar have a higher density than the bricks themselves, but lower than that of stone.¹³⁵ One of the functions of mortar joints in brickwork, aside from acting as a bonding matrix, is to allow the outward movement of water through it, rather than through the clay units. It is for this reason that the mortar should be lower in strength than the bricks or tiles.¹³⁶

Brick mortar analysis

Extensive restorations and repointing of many of the building in the corpus have limited the possibility for visual analysis of the original mortar beds, and have hidden the true extent of the variations in methods of mortar production in the medieval

¹³⁰ Tunçoku and Caner-Saltik (2006), pp.1886-1889. Caner (2003), p.81 states that the average lime content of mortar used in Rûm Saljûq architecture is 60 percent.

¹³¹ See *ibid.*, p.1890 for the aggregate content of 7th/13th century mortars in Konya, which varies between 29.5% and 49.3% (mostly medium and fine). The coarse and medium aggregates are mainly sandstone and metamorphic rock fragments, along with some feldspar, quartz and mica minerals.

¹³² Caner (2003), p.9.

¹³³ *Ibid.*, pp.9-10. Opal A is hydrous silica (SiO₂.nH₂O).

¹³⁴ Caner (2003), p.11.

¹³⁵ Tuncoku, Caner-Saltik and Boke (1993), p.372 gives the densities (g/cm³) of the various components of a small mosque in Konya, built in the 7th/13th century, as follows; red brick 1.47, yellow brick 1.40, pink brick 1.38, brown brick 1.77, travertine 2.85, andesite 2.17, stone mortar 1.63 and brick mortar 1.53.

¹³⁶ Ashurst and Ashurst (1988), Vol. 2, p.79.

period. A number of the early brick minarets remain unmolested and the analysis of the mortar by the current author from five of them provides the evidentiary base for some wider conclusions regarding the nature of the mortars' uses in brick construction across the region. The data is displayed in table 3.3 and the conclusions are discussed in the following section. The minarets in question represent a wide geographic area and span the entire period under discussion.

The traditional Iranian baked brick mortar was a mix of hydrated lime and sand,¹³⁷ with gypsum tending to be used for plaster and stucco work.¹³⁸ However, during the Ilkhānīd period, Wilber argues that gypsum mortar was much preferred because it set quicker than lime mortar.¹³⁹ The mortar sample from the Tepsi minaret in Erzurum (c. mid-6th/12th century)¹⁴⁰ is pure white internally and is probably gypsum-based (fig. 3.40 A). The lack of any bleaching of the chopped straw indicates that there is no significant lime component, leaving gypsum as the logical alternative.¹⁴¹ The Tepsi mortar contains chopped organic sections that are flat flakes, light yellow in colour, and have the appearance of straw. There are also numerous very small black aggregate inclusions, most likely pozzolans, but there is no evidence of any sand. The rounded exterior surface of the mortar indicates that it had a stiff, rather than sloppy, consistency when applied. The relatively consistent appearance of the unpointed mortar on the interior of the shaft indicates that the preference of the bricklayers of this minaret was to work with relatively stiff mortar. Given the limited amount of binder and aggregate in the mortar, this would be a sensible precaution against cracking, as the void left by the evaporating water leads to cracks forming if the ratio of water to aggregate is out of balance.¹⁴² The mortar used on the exterior of the Great Mosque minaret in Sivas may also be gypsum-based, and is similar in

¹³⁷ Wulff (1966), p.113. It was only for hydraulic mortars used in reservoirs that organic material was added, usually hairy seeds of rushes, along with wood ashes, to improve bonding and limit cracking.

¹³⁸ *Ibid.*, pp.125 and 134.

¹³⁹ Wilber (1969), p.49. Gypsum mortar is made by calcinating hydrated calcium sulphate in small kilns, and was frequently mixed with clay, sand, fine gravel and mud. Samples range in hardness from very hard to soft, and colour varies from white and buff to grey.

¹⁴⁰ See appendix 2.4 for details of the minaret.

¹⁴¹ This is in contrast to the sample from the Eğri minaret in Aksaray (616-634/1220-1237), where the chopped straw has been bleached white, most likely as a result of the strongly alkaline nature of the lime in the mortar used in that structure.

¹⁴² The mortar on the interior of the shaft is consistent in appearance, but the upper external brickwork section was inaccessible for close visual inspection.

appearance to the mortar used in the Tepsi minaret. It is pure white inside, with no obvious use of sand or other aggregate inclusions. There is very little evidence of any erosion of the mortar beds due to weathering on the lower section of the minaret. Internal voids, and the rounded shape, indicate that the mortar used in Sivas was also particularly stiff when applied. The Sivas and Erzurum minaret mortars are the strongest of the ones analysed.

The base of the Great Mosque minaret in Harput (561/1166) also forms part of the west wall of the mosque.¹⁴³ The mortar is very white, and like the Tepsi minaret mortar, there is no visible use of sand (fig. 3.40 B). Unlike the Erzurum mortar, it is very crumbly and contains a large number of black aggregate inclusions which vary in size. The Hötüm Dede minaret in Malatya (*c.* 1st quarter of the 7th/13th century)¹⁴⁴ was built using a soft granular mortar with a high sand content that is very crumbly and comes apart easily when touched (fig. 3.40 C). The original exterior surface of both the bricks and the mortar is deeply eroded. The Malatya mortar is of a fundamentally different nature from the mortar used in the Erzurum, Sivas, Harput or Aksaray minarets. It is the most highly eroded of the mortar typologies, and the one with the highest ratio of sand.¹⁴⁵ The mortar used in the Eğri minaret in Aksaray¹⁴⁶ (fig. 3.40 D) contains white inclusions which are lumps of lime that did not mix with the aggregate.¹⁴⁷ There is sand, and a wide array of black stone aggregate sizes in the mortar mix, ranging from <0.5mm to >5mm. They are rounded river bed aggregates, not the more efficient angular crushed aggregates. This indicates that the source of the sand and gravel for the mortar may have been the nearby river that runs through the town and passes by the site of the minaret.

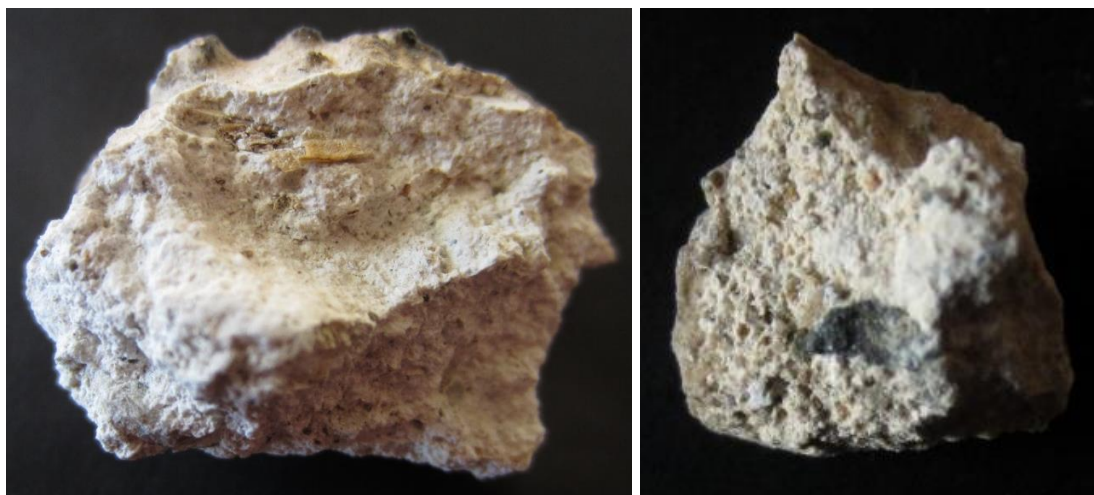
¹⁴³ See appendix 2.5 for more details of the minaret.

¹⁴⁴ See appendix 2.7 for more details of the minaret.

¹⁴⁵ Wulff (1966), p.113. It remains unclear whether lime or gypsum mortar was most common in Iran, but it appears that both methods were employed in the late 7th/13th and into the 8th/14th century. These are likely to have been used in the period prior to Mongol rule as well.

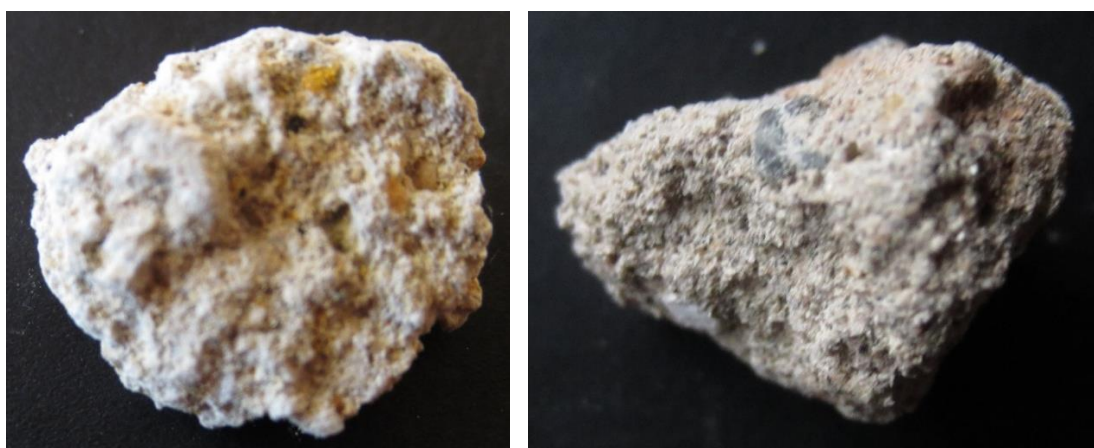
¹⁴⁶ See appendix 2.6 for more details of the minaret.

¹⁴⁷ Tunçoku and Caner-Saltık (2006), p.1889. Testing of the same phenomena in 7th/13th century mortar of the Hoca Hasan mescid minaret in Konya showed it to be Micritic Calcite (CaCO₃) derived from previously slaked and re-carbonated lime.



A – Tepsi minaret, Erzurum (25mm x 20mm)

B – Great Mosque minaret, Harput (10mm x 9mm)



C – Hötüm Dede minaret, Malatya (14mm x 12mm)

D – Eğri minaret, Aksaray (18mm x 13mm)

Fig. 3.40 – Anatolian brick-built minaret mortar samples © R. McClary

Although this study draws on a very limited number of samples,¹⁴⁸ a general trend can be detected. In the north and east of the lands that were to become the dominion of the Rūm Saljūqs, the mortar appears to be gypsum-based, and did not include much sand or aggregate. In the more western and southern regions lime-based mortar, with sand and a greater amount of aggregate, tended to predominate.

¹⁴⁸ Increasingly, the surviving buildings are being repointed with new mortar as part of the restoration process, thus limiting the number of original samples available.

Name	Internal Colour	Texture	Sand Content	Aggregate Size	Colour	Organic Content	Level of Erosion
Tepsi minaret, Erzurum	Pure White	Hard	None	< 0.25 mm	Black	Chopped Straw	None (Internal)
Great Mosque minaret, Harput	Pure White	Very Crumbly	None	< 1 mm to > 5 mm	Black	None	Limited (Sheltered)
Great Mosque minaret, Sivas	Pure White	Very Hard	None	None	None	None	Very Limited
Eğri minaret, Aksaray	Light Grey	Crumbles to Fine Dust	Some	< 0.5 mm to > 5 mm	Black (rounded)	Chopped Straw	Highly Eroded
Hötüm Dede minaret, Malatya	Buff		High	Small	Black and Saffron Yellow	None	Highly Eroded

Table 3.3 – Analysis of mortar from brick minarets

Smooth surface uses of plaster

In addition to structural mortar, and the two carved plaster panels of epigraphy, on the Mengücek Gazi tomb in Kemah (figs. 2.53 and 2.54), discussed in chapter two, several buildings from the period of study feature areas of smooth plaster. Examples include the external surfaces of the Konya kiosk, the ground from which the epigraphy projects at the Bekar Sultan tomb in Gülağaç and the skim-coat over the bricks into which the Sivas hospital mortar incisions were made.¹⁴⁹ As with construction mortar, there were two basic types of plaster in use for these more decorative purposes: gypsum-based and lime-based. Gypsum, when heated to about 130 degrees Celsius, yields a hemi hydrate which, with the addition of water, will set hard.¹⁵⁰ Lime plasters generally have a higher content of binder lime than construction mortars do. This is due in part to the lack of aggregates, as a smooth surface is generally required.¹⁵¹

Plaster was used as a ground and bedding matrix for glazed and unglazed bricks and other intarsia, in order to create both epigraphic and geometric patterns.¹⁵² Two of the eight facets of the Kırk Kızlar tomb in Niksar are decorated in a manner similar

¹⁴⁹ See chapter four, pp.306-328 for details.

¹⁵⁰ Ashurst and Ashurst (1988), Vol. 3, p.27.

¹⁵¹ Caner (2003), pp.81-82 analysed a large number of 7th/13th century samples and found that all were over 85%, and about half were above 95% lime. The aggregates vary from 3.15% to 15% in fine plaster layers. In contrast, the percentage of aggregates in gypsum plaster was found by Tuncoku, Caner-Saltik and Boke (1993), p.373 to be generally much lower at 3.8% +/- 0.7.

¹⁵² See the base and shaft of the Great Mosque minaret in Sivas in chapter two, pp.127-145. For the façade of the tomb of 'Izz al-Dīn in Sivas see chapter four, pp.351-6.

to that of the two earlier Ildegüzid tombs in Nakhchivān (fig. 3.41).¹⁵³ The same method was used throughout the period of study and across a wide geographical area.

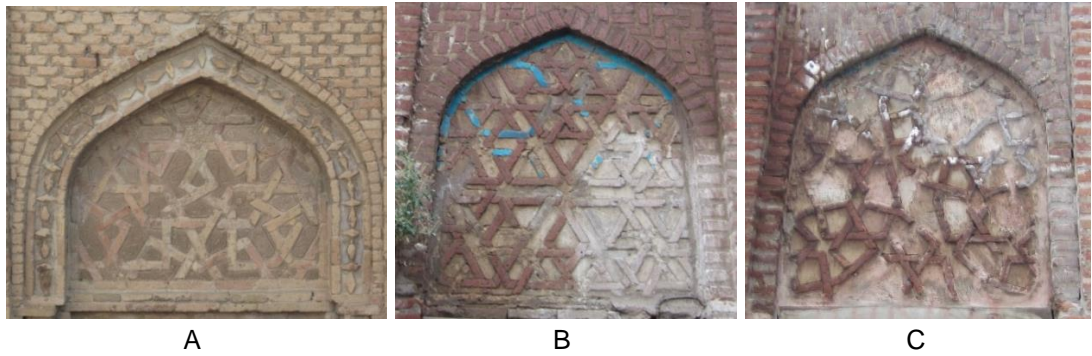


Fig. 3.41 –Yūsuf ibn Kuthayyir tomb, Nakhchivān (A) and Kırk Kızlar tomb, Niksar (B and C)
© R. McClary

The smooth mortar between the glazed and unglazed brick inserts was left thicker at the top of each section than the bottom, to compensate for any sagging or plastic flow, and shows the working practices of the craftsmen involved. As fig 3.42 shows, the mortar contracted slightly, due to the moisture loss, but firmly remained in place.



Fig. 3.42 – Kırk Kızlar tomb, Niksar (c .611-17/1215-20); external facet mortar detail
© R. McClary

As early as the late 5th/11th century, tomb towers in Iran had multiple layers of hard dark plaster with a fine white outer layer which had interior fresco painted

¹⁵³ Although the two Kemah patterns appear very different, all the examples are based on hexagonal grids.

decoration.¹⁵⁴ There are surviving examples of red geometric patterns applied, using the fresco method, to a fine layer of plaster on the exterior of buildings. It was a ubiquitous practice on royal and other elite residential structures, and has been described by Redford as a dynastic signature, as there were only two patterns used: zigzag and checkerboard.¹⁵⁵ A small fragmentary section of a cruciform pattern, that echoes the pattern of the decorative brickwork of the balcony support above it, remains on the east wall of the Kılıç Arslān II kiosk in Konya, covering the rough stone substructure (fig. 3.43). The patterns were always painted in red, with the red pigment (consisting of powdered haematite) mixed with water and added to the wet lime plaster.¹⁵⁶ The colour of the patterns is significant, as red was the colour of royal insignia in the Rūm Saljūq sultanate.¹⁵⁷



Fig. 3.43 – Kılıç Arslān II kiosk, Konya (c. 569/1174), painted plaster of the east wall
© R. McClary

¹⁵⁴ Stronach and Cuyler Young (1966), p.10 describes the plaster decoration of the earlier Kharraqān tomb (460/1067-8).

¹⁵⁵ Redford (2000)b, pp.318-323. The best preserved examples, dating from the rule of 'Alā al-Dīn, are found in the frost-free regions along the south coast of Anatolia. Redford (*ibid.*, p.318), states that the two patterns are described as 'simple charges' in both the Frankish and Mamlūk heraldic systems, and presumes that they also served the same function for the Rūm Saljūqs.

¹⁵⁶ Caner (2003), p.84.

¹⁵⁷ Flood (2009), p.234. He adds that the word *al-Sulṭān* was written in red on court documents.

Although the original layers rarely remain visible either because of losses or re-plastering over time, plaster was a common interior finishing material across the region. It is a material capable of giving a uniform surface appearance to structures built of multiple materials with differing surface tones and textures. The partially ruined hamam in Aksaray, founded by Kılıç Arslān II (c. second half of 6th/12th century), demonstrates the use of the technique, and also represents one of the earliest examples of the use of ‘Turkish triangles’ to transition from a square to a circle in order to support a dome (fig. 3.44).¹⁵⁸



Fig. 3.44 – Dome interior of the Kılıç Arslān II Hamam, Aksaray (c. mid-late 6th/12th c.)
© R. McClary

Very few craftsmen’s tools survive from the Saljūq period, and it is to contemporary drawings, or later practices of similar crafts which are better documented, that the attention generally has to focus. A rare exception to this general lacuna is a

¹⁵⁸ The poorly published structure is currently undergoing a process of excavation and structural stabilization under the direction of Dr. H. Karpiz, Dr. O. Eravşar and Dr. O. N. Dülgerler.

plasterer's trowel,¹⁵⁹ in the Arkeoloji Müzesi in Sivas, which is likely to have been the type of tool used to apply a smooth finish coat of plaster (figs. 3.45 and 3.46). The rectangular body is formed of fired clay, with a roughly formed handle and a smooth turquoise glazed underside.¹⁶⁰ The use of glaze on a tool is very unusual, but would have allowed for the consistent creation of a very smooth surface, and would also have been easy to clean. This trowel can be seen to represent the wide diversity of uses of glaze, in an architectural context, which has no decorative function whatsoever, being an entirely practical application of the medium.



Fig. 3.45 – Glazed terracotta plastering trowel (c. 7th/13th c.), side view © R. McClary

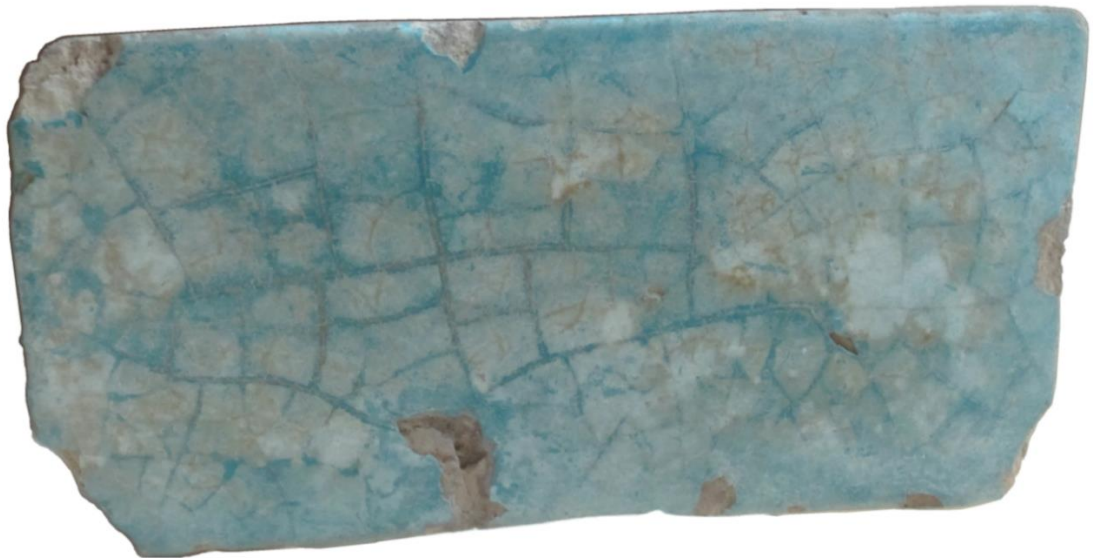


Fig. 3.46 – Glazed terracotta plastering trowel (c. 7th/13th c.), bottom view © R. McClary

¹⁵⁹ Wiber (1976), pp.32-3, in his discussion of pre-Ilkhānīd craftsmen in Iran, states that *jassas* is the Persian word for both a plaster worker and a type of fine plaster.

¹⁶⁰ The tool measures *circa* 25cm x 10cm on the base.

Moulded internal use of plaster

A considerable number of fragments from the interior of the Kılıç Arslān II kiosk in Konya survive, but none remain *in situ* (fig. 3.47). They are distributed around the world in private and public collections, with a large number in Berlin, Paris and İstanbul. A large selection of the fragments was published by Sarre in 1936,¹⁶¹ so the decorative internal stucco survivals will not receive as much attention in this study as other aspects of the structure. As a result of their removal from the structure, the original locations and layout have been lost, but it may be presumed, given the level of detail, that they were located around windows, doors, and above the tiled dado.

One section of a plaster frieze, now in İstanbul,¹⁶² depicts a horseman, a lion and a dragon, in a moulded version of the images seen on a number of the tiles from the interior of the kiosk. The depiction of a dragon slayer shows that the motif was incorporated into royal imagery in a courtly setting by the late 6th/12th century at the latest.¹⁶³ The use of the symbol of victory over evil in this context combines multiple layers of meaning in the same imagery. It has been argued by Pancaroğlu to be referencing the Persian *shāh-nāma*, as well as the Holy Rider iconography associated with St. Theodore, a motif that had been prevalent in the area since the 6th century CE.¹⁶⁴

¹⁶¹ See Sarre (1936), pls. 9-18. Similar panels were also used in the later Kubadabad palace near Beyşehir. See Arık (2008). There is a mix of vegetal, geometric and zoomorphic patterns in low relief, which were produced in moulds.

¹⁶² The panel, which measures 29cm x 58cm, is in the Türk ve İslam Eserlei Müzesi, accession number 2831. See the image in Ölçer (2005), pp.114-115. Öney (1967), pp.153-4 discusses the same fragment.

¹⁶³ Pancaroğlu (2004), p.158 dates the fragment to c. 1200 CE.

¹⁶⁴ *Ibid.*, pp.152 and 159.



Fig. 3.47 – Kılıç Arslan II kiosk, Konya (c.569/1174); three pieces of moulded internal plaster decoration © R. McClary

The only record of the painted stucco ceiling and muqarnas cornice in the interior of the kiosk in Konya is in the lithographs published by Texier in 1849 (figs. 3.48 and 3.49).¹⁶⁵ The decoration employed similar colours and patterns to those found on the glazed *minā'ī* wall tiles from the kiosk. This is particularly clear in regard to the gold on blue decoration used in the hexagonal sections of the ceiling. Such similarities show the aesthetic unity that existed across materials within the structure, although the painted decoration was entirely vegetal in nature, with no figural or zoomorphic elements. In contrast to the curvilinear painted decoration, the form of the ceiling was entirely rectilinear in nature, consisting of squares, hexagons and dodecahedrons. Texier noted that the ceiling decoration was quite coarse when viewed up close, and suggested that the variations in the patterns in the hexagons indicated that they were carved rather than moulded.¹⁶⁶



Fig. 3.48 – Kılıç Arslān II kiosk, Konya; stucco ceiling muqarnas cornice (after Texier (1849), pl.101)

¹⁶⁵ Texier (1849), pls. 101 and 102. It is extremely unlikely that the stucco retained the level of colour shown in the lithographs, but it may be assumed that there was enough remaining to allow for the reconstruction by Texier.

¹⁶⁶ *Ibid.*, p.148.

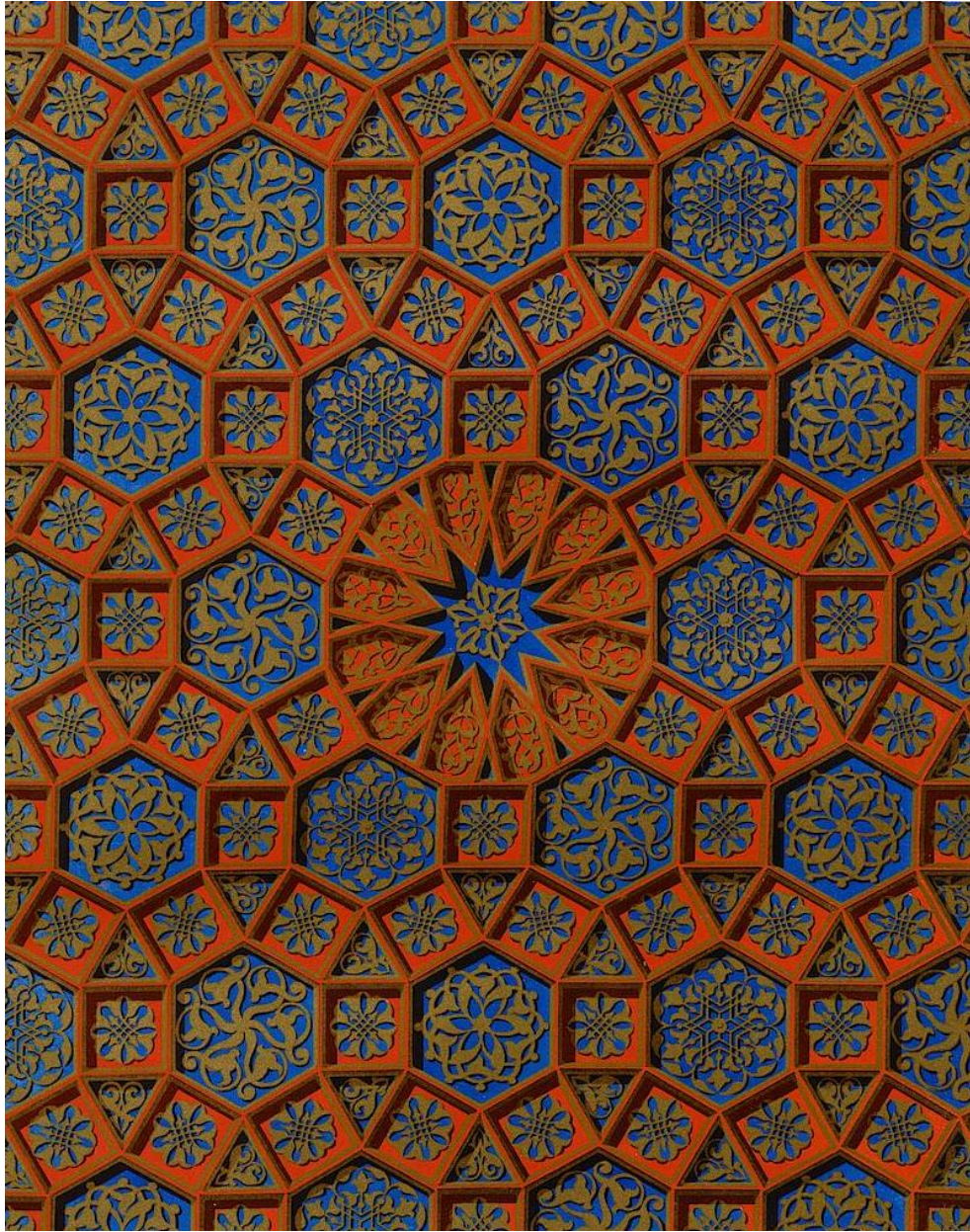


Fig. 3.49 – Kılıç Arslān II kiosk, Konya; plaster ceiling (after Texier (1849) pl.102)

Mortar incisions at Kemah

The Mengücek Gazi tomb in Kemah (c. 586/1190)¹⁶⁷ is one of only two buildings in Anatolia which features incised patterns in the mortar beds, the other being the Sivas hospital. Although a description, plan and elevation have been published by Ünal, there is only a single mention of the presence of geometric incisions at Kemah.¹⁶⁸

¹⁶⁷ For details of the rest of the tomb see chapter two, pp.100-108.

¹⁶⁸ Ünal (1968), p.157 simply refers to “*décor géométrique gravé*”. The tomb is also included in Önköl (1996), pp.46-53 but no mention is made of the extensive array of unique mortar patterns.

They occur in the rising joints between bricks, as well as alternating horizontally between bricks on single brick width bevelled facets of the portal. They are also set vertically on the top bevelled facets of the recessed panels of the rest of the tomb, as well as down the sides. The technique of decorating the wide rising joints between exposed bricks was developed in Iran, with the first extant examples employed in the south dome of the Friday mosque in Işfahān (473/1080-81).¹⁶⁹

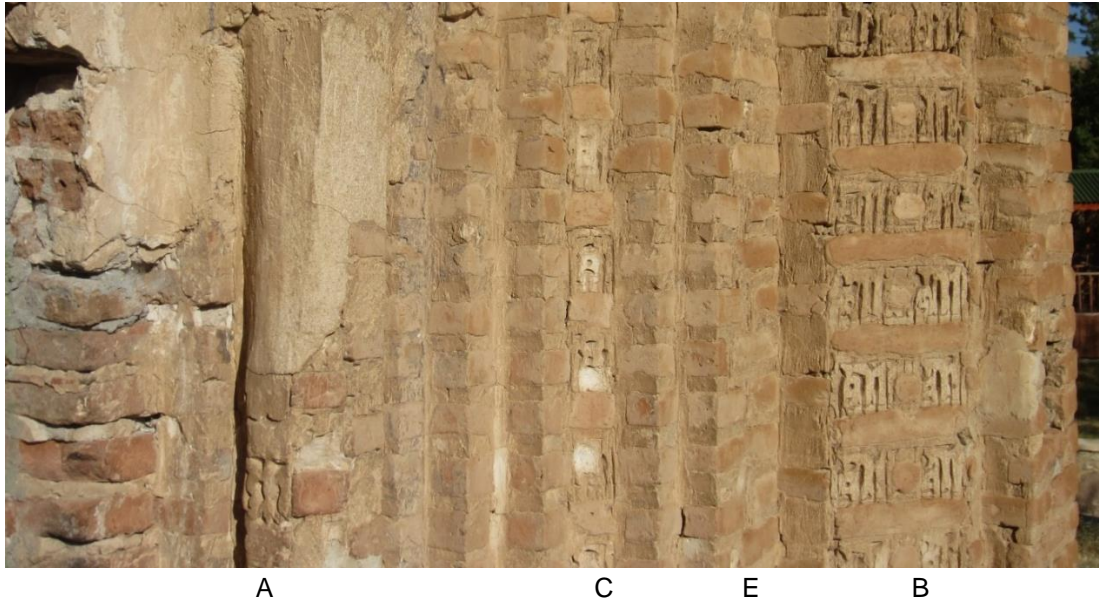


Fig. 3.50 – Mengücek Gazi tomb, Kemah (c. 586/1190), north side of portal showing mortar patterns © R. McClary

Although clearly related, the methods employed in Anatolia (and seemingly developed in Ildegüzid architecture) were somewhat different, if not as common, as the one employed in Iran in the 5th/11th century. In the Iranian examples the patterns are generally stamped into the mortar, or consist of baked terracotta plugs inserted into the fabric of the building between bricks.¹⁷⁰ A close examination of the way the patterns were executed shows that the lines at Kemah were created by dragging a tool over the partially set surface of the mortar. The triangular and circular incisions are the result of a pointed tool being inserted into the mortar (fig. 3.52). As a result, each individual repeat of a pattern is unique. The technique used in Kemah may be viewed as an adaptation, rather than an adoption, of the Iranian antecedents, as there are innovative elements not seen in any of the surviving Iranian examples. The

¹⁶⁹ Hillenbrand (1972), p.51.

¹⁷⁰ *Ibid.*, p.48. See also Stronach and Cuyler Young (1966), p.5.

patterns are all executed in a rather haphazard and irregular manner, although the original appearance of most of the external patterns is marred by extensive weathering. A more sheltered example of the paired eight-triangle-with-central-circle pattern (fig. 3.51 D), located on the upper bevel of one of the recessed panels (fig. 3.53), is somewhat better preserved than many of those on the more exposed portal facets.

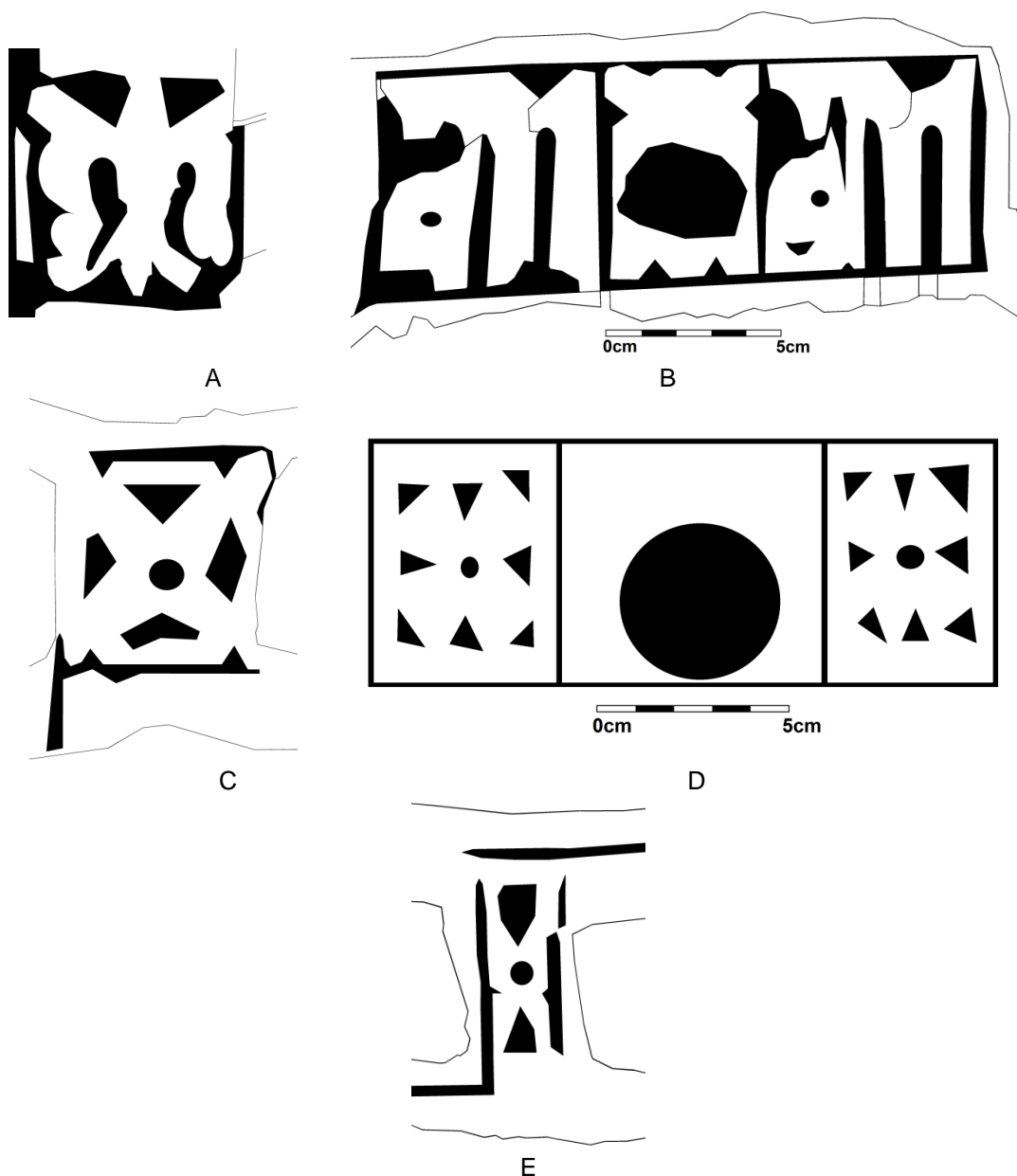


Fig. 3.51 – Mengücek Gazi tomb, Kemah (c. 586/1190); mortar incision line drawings
© R. McClary



Fig. 3.52 – Mengücek Gazi tomb, Kemah (c. 586/1190); geometric mortar incisions on the portal © R. McClary



Fig. 3.53 – Mengücek Gazi tomb, Kemah (c. 586/1190); geometric mortar incisions on the facet bevel © R. McClary

In addition to the three patterns incised into the plaster bed of the entrance arch spandrels discussed below (fig. 3.59), there are five different patterns employed on the exterior of the tomb which are directly related to the brickwork. Two of them occur only in a paired form, one being an epigraphic pattern (fig. 3.54), and the other consisting of eight triangular incisions around a small circle (fig. 3.51 D). Both types

of paired patterns are separated by a circular brick plug, in an inversion of the Iranian manner of using baked plugs for the patterns. The entire compositions fill the space of a single brick face, and are located on the bevelled facets of the portal. In addition, the pattern in fig. 3.51 D is also used on the bevels of the blind panels of the other seven facets of the octagonal tomb.

The epigraphic patterns are located on the bevels on either side of the doorway of the tomb (fig. 3.52). Extensive erosion, coupled with the variations in execution from one pattern to the next, makes a definitive transcription and translation extremely difficult. The most likely reading, and fitting for a tomb, is *li 'llāh* (for Allāh), with the upper section of the second *lām* bent forward.¹⁷¹ The rather more abstracted representation in the line drawing (fig. 3.51 B) allows for a degree of reconstruction of some of the eroded elements. No other more plausible reading can be discerned in any of the variations of the pattern.¹⁷²



Fig. 3.54 – Mengücek Gazi tomb, Kemah (c. 586/1190); epigraphic mortar incisions flanking the portal © R. McClary

¹⁷¹ The top of the *kāf* at the beginning of the brick epigraphic inscription over the door of the tomb is bent forward in a similar manner. See fig. 2.51.

¹⁷² Stronach and Cuyler Young (1966), p.8 note that the easternmost, and older, of the two tomb towers at Kharraqān in Iran (460/1067-8) has an early example of the decorative use of the word *Allāh*. There are also examples of the common X-and-circle rising joint pattern. They state (*ibid.*, p.15), that the Kharraqān tomb has vertical and horizontal lozenges around the entrance. A similar technique was used on the Yūsuf ibn Kuthayyir and Mengücek Gazi portals, demonstrating the continuity of motifs across time and space in the Persianate tradition of funerary architecture.

The three patterns which occur singly consist of two that are roughly square, and one that is rectangular. One of the square patterns features a stylised eagle (figs. 3.55 and 3.51 A), possibly indicative of some sort of royal connection for the tomb, while the other one consists of four triangles around a circle (fig. 3.56) like a simpler version of the twinned pattern in fig. 3.51 D. The roughly square geometric pattern consists of four incised triangles around a central circle (fig. 3.56), but the line drawing shows that the treatment of the corners makes it possible to view it as an X superimposed on an octagon (fig. 3.51 C). The same style of corner can also be seen in the pattern around the central plug between the two epigraphic patterns. This use of the octagon connects the micro patterns to the macro plan of the entire structure.



Fig. 3.55 – Mengücek Gazi tomb, Kemah (c. 586/1190); Stylised eagle motifs on engaged column of the portal © R. McClary



Fig. 3.56 – Mengücek Gazi tomb, Kemah (c. 586/1190); single geometric mortar pattern around the portal © R. McClary

The narrow rectangular pattern consists of an X with a circle in the centre. The external examples are so eroded that they appear to consist of two triangles, one above and one below a small circle (fig. 3.51 E). The patterns look as though they were executed in a rapid, almost careless manner. This was the most common pattern employed across Iran,¹⁷³ and is the only pattern seen on the Kemah tomb that is very similar to one found on the only other building in Anatolia which has incised rising joint patterns, the hospital founded by ‘Izz al-Dīn Kay Kāwūs I in Sivas in 614/1217-18 (figs. 4.29 D, 4.29 F and 4.30).¹⁷⁴ The same pattern is found on the octagonal central pillar of the crypt of the tomb as well (fig. 3.58).¹⁷⁵

¹⁷³ Hillenbrand (1972), p.51. Fig.3 on the same page shows a very similar pattern from the Pīr Mausoleum in Tākistān, thought to date from the last quarter of the 6th/12th century.

¹⁷⁴ See chapter four, pp.306-328 for a detailed analysis of the patterns in the north iwan of the hospital in Sivas.

¹⁷⁵ There is evidence of extensive repair and cleaning of the mortar patterns in the crypt, so to what extent the existing patterns are the same as they originally were is unclear.



Fig. 3.57 –Mengücek Gazi tomb, Kemah (c. 586/1190); narrow mortar incision on the exterior © R. McClary



Fig. 3.58 – Mengücek Gazi tomb, Kemah (c. 586/1190); narrow mortar incisions on the crypt column © R. McClary

Ildegüzid origins

As has been discussed previously, much of the form and decoration of the tomb structure is closely related to that of the Yūsuf ibn Kuthayyir tomb in Nakhchivān (557/1162-3) which features the name of the craftsman ‘Ajamī ibn Abī Bakr al-Nakhshiwānī. In regard to the rising mortar joint patterns, the picture changes somewhat, as the majority of the patterns on the Yūsuf ibn Kuthayyir tomb are not only curvilinear; they are incised into a thin skim-coat of plaster on the facets around the geometric brick decoration (fig. 3.60). There are a number of similarities, with examples of triangles incised in a similar manner to the ones around the framing band of the arch over the entrance (fig. 3.59).



Fig. 3.59 – Mengücek Gazi tomb, Kemah (c. 586/1190); mortar patterns in the spandrel
© R. McClary



A



B



C

Fig. 3.60 – Patterns from the Yūsuf ibn Kuthayyir tomb, Nakhchivān (557/1162-3), similar to the ones on the spandrel at Kemah © R. McClary

A comparison of figs 3.59 and 3.60 shows that the three patterns used to decorate the spandrels can all be related to examples on the earlier Nakhchivān tomb. The

curvilinear patterns are not unlike fig. 3.60 C, while the only difference in the pattern that has three triangular shapes is the shape which they surround. The closest comparison can be seen in the pattern in fig. 3.60 A, located in the *cavetto*. It has had some restoration and may be described as an elongated version of the X-and-circle pattern used in the rising joints of both structures. The incised patterns in the sections of mortar in and around the spandrels of the entrance arch at Kemah do not decorate a structurally necessary feature, in contrast to the layers of mortar which bond the bricks together. There are two different aesthetics, as the latter is limited to the rising joints and bed joints and dominates in the Anatolian examples. In contrast, the majority of the incisions in Nakhchivān are in the manner of the ones seen in fig. 3.60 C, and enliven the areas around the decorative, non-structural brick patterns in the seven blind facets of the tomb.

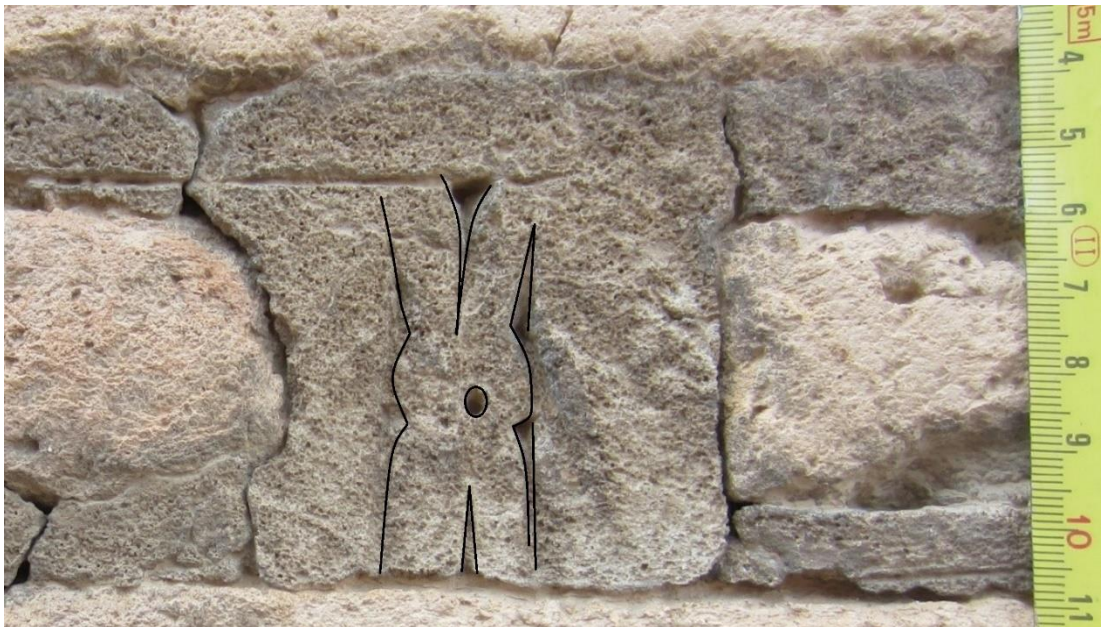


Fig. 3.61 – Yūsuf ibn Kuthayyir tomb, Nakhchivān (557/1162-3); X-and-circle mortar incisions around the portal (black outline added for clarity) © R. McClary

As at Kemah, the Yūsuf ibn Kuthayyir tomb also features (eroded) narrow rectangular X-and-circle patterns in the rising joints. These are connected by straight lines incised in the bed joints of the outer framing section of the portal (fig. 3.61). The numerous differences, such as the lack of curvilinear patterns, the plain external facets and the use of bevels around their edges, along with the significant similarities, suggest that the craftsmen responsible for the Kemah tomb, including ‘Umar ibn Ibrāhīm al-Ṭabarī whose name is on the building, would most likely have worked on

structures in Nakhchivān (or at least have been trained by people who had) but subsequently developed their own individual style as they moved west. The patterns in Kemah, although not subsequently adopted across the region, provide tangible evidence of the close connections between north-west Iran and central Anatolia in the late 6th/12th century.¹⁷⁶

Mortar: Conclusion

Mortar remains a crucial component in the construction of almost all structures, regardless of their primary medium.¹⁷⁷ In addition to being the matrix which holds the other materials together, it was also an extremely versatile medium for the creation of a wide number of decorative details. These include moulded, painted, carved and incised patterns, and were used alongside the glazed elements, as well as within the mortar beds of regular brick bonds; hence the importance of this study.

¹⁷⁶ Although the Kemah tomb is temporally closer to the later Mu'mina Khātūn tomb (582/1186-7) in Nakhchivān City, there are not any obvious connections to the style of the mortar decorations on that structure. It is also a much larger and more highly decorated structure than the Kemah tomb.

¹⁷⁷ Anatolian exceptions would be the Gökçeli mosque (1206 CE) and the Yaycılar mosque (1206 CE). For a survey of the surviving wooden mosques in the region see Naza-Dönmez (2008).

TIMBER

Structural and decorative uses of timber

Wood is an extremely versatile material which was employed for a wide range of decorative and structural roles across the various typologies of Islamic architecture all over Anatolia. These uses include internal structural uses, primarily in the form of tie-beams and internal bracing. There are also numerous, and more clearly visible, external structural uses, such as lintels and impost blocks at the transition point from capitals to the springing of arches, as well as at other transition zones on a minaret or dome. Most buildings were originally fitted with decorated carved wooden doors and window shutters, often with metal accents, while the Great Mosques featured elaborately carved *minbars*. Alongside these surviving examples of timbers that still form part of the fabric of the surviving structures, it is possible to deduce other uses for wood in the construction process, such as scaffolding and cranes. In addition to their structural and decorative roles, samples of timber can also be used for dendrochronological analysis in order to provide a more secure date range for buildings, especially those without any epigraphy.¹⁷⁸ The most common *genus* of tree used by the carpenters and builders of medieval Anatolia was *Quercus* (oak),¹⁷⁹ which can be found across the region, but is the dominant *genus* in the mountains of northern Anatolia along the Black Sea coast.¹⁸⁰ It is very difficult to identify individual species of *Quercus* without observing the leaves,¹⁸¹ so identification by visual analysis of the cut timbers is not possible. There is a strong chance that the larger beams are often from *Quercus hartwissiana*, as it is one of the more common of the large species of *Quercus* which grow in the north of Anatolia. There are so many different species and hybrids that it is likely that a large number of different

¹⁷⁸ See the works of Peter Ian Kuniholm, particularly Kuniholm (1994).

¹⁷⁹ Kuniholm (1994), p.406 states that in the medieval period oak was the most common *genus*, along with unspecified conifer and occasionally juniper. Ölçer (2005), p.399 states that the doors from the Great Mosque in Cizre are primarily walnut, with later repairs in poplar on the lower sections.

¹⁸⁰ Species of family *Fagaceae* genus *Quercus* grow across Anatolia, but the tree, rather than shrub species, grows predominantly in the north Black Sea coastal regions. See Davis (1982), pp.888-892, maps 79-90 for the distribution of the various species across Anatolia.

¹⁸¹ Czechtz (1938/1939), p.223.

varieties of wood exist in the buildings of the period.¹⁸² Although the working methods and tools of the craftsmen in Anatolia are poorly documented, there is a contemporary mosaic from the late 6th/12th century on the interior of the cathedral at Monreale outside Palermo in Sicily, depicting the construction of the Ark. It illustrates woodworkers and a number of their tools, including one-man and two-man saws, an adze, and a broad axe being used for squaring timbers (fig. 3.62).¹⁸³



Fig. 3.62 – Woodworking mosaic, Monreale Cathedral, Sicily (late 12th century CE)
© R. McClary

Internal structural use

The palace kiosk of Kılıç Arslān II is located at the north end of the citadel in Konya and its rather ruinous state makes it possible to observe the internal structure, which features the structural integration of multiple materials around a timber matrix. The timber has been used to provide a date of 1174 CE, through the use of

¹⁸² Davis (1982), p.66 notes widespread hybridisation and an unending multiplicity of local variants and hybrids of *Quercus* in Anatolia. Yaltırık (1981), pp.177-185 gives identifying notes for eight common species of oak tree, including *Q. hartwissiana*.

¹⁸³ Although the mosaic is a long way from Anatolia, Salzman (1952), p.341 describes similar tools being used in England in the medieval period, and notes (*ibid.*, p.331), that tools in the building trade hardly varied from the Roman period to the nineteenth century.

dendrochronological analysis and cross comparison with a large tree ring database.¹⁸⁴ The building features a rubble and mortar core, with brick facing and muqarnas brackets. Timber beams have been used to connect the two different materials, and act as a matrix for the muqarnas brackets (fig. 3.63).¹⁸⁵ The outside of the structure features plaster with fragments remaining of rectilinear geometric patterns painted in red.



Fig. 3.63 – Kılıç Arslān II kiosk, Konya (c. 569/1174); internal detail © R.McClary

¹⁸⁴ Kuniholm (2004), p.140. Akurgal (1980), p.94 cites the Ottoman traveller Evliya Çelabi who also gives a date of 569/1173-4 for the kiosk.

¹⁸⁵ For a detailed analysis of the brick muqarnas on the kiosk see pp.177-80.

The portal of the Büyük Karatay madrasa in Konya is another example where the internal timber elements are now exposed owing to structural losses. It has two pairs of internal structural tie-beams which, presumably, run through the entire length of the portal. One pair is near the top, and the other is located just above the lintel of the doorway, above the seventh row of ashlar (fig. 3.64). The presence of the timbers has been revealed by the loss of the wall to the left (south) of the portal, possibly as long ago as the middle of the 7th/13th century when the largely brick madrasa was built for Qarāṭāī in 649/1251.¹⁸⁶ In the lower pair, the beam nearest to the front of the portal has been squared-off, whereas the one at the rear remains round.¹⁸⁷ The incorporation of timber tie-beams, a common practice in both brick and stone architecture in the region, has two primary purposes. In mortared masonry the wood provides strength until the mortar has cured, and prevents uneven settling.¹⁸⁸ The use of wooden tie-beams within the walls of stone and brick structures also provides increased sheer strength to resist the seismic activity, for which the region is well known.¹⁸⁹ The intention was to knit the fabric close together in order to counter earthquake damage and prevent uneven settling of the structure.¹⁹⁰ It may be presumed that many, if not most, of the standing structures have similar beams embedded within their walls, but it is only because of the loss of the wall to the south of the Karatay portal that the beams are visible in this instance. The setting of beams into the thickness of walls, primarily to reduce the plastic flow that is a characteristic of uncured lime mortar, is a technique that can be found in the Hagia Irene in İstanbul, and is presumed to have existed in almost all Byzantine churches.¹⁹¹ The investigation of the construction methods, as well as the visual appearance of the buildings, shows that there is a clear difference between the newly developed external aesthetic of the buildings, and the much more traditional methods of

¹⁸⁶ Rogers (1972), p.364 gives the transliteration and translation of the band of epigraphy along the top of the portal.

¹⁸⁷ The reason for this difference in the cross-section profile of the two beams remains unclear.

¹⁸⁸ James (1982), p.134 states that it could take six months for the mortar in medieval arches to set.

¹⁸⁹ With reference to the architecture of Iran, both Wulff (1966), p.114 and Wilber (1969), p.53 concur on this point. Wilber (1969), pp.52-53 states that wood was commonly used in Iran before, during and after the Ilkhānid period, in the form of round pieces of considerable length embedded within the wall, horizontal and parallel to the direction of the wall.

¹⁹⁰ *Ibid.*, p.53.

¹⁹¹ Ousterhout (1999), p.214.

reinforcement and construction. These internal methods exhibit a greater degree of continuity from the Byzantine to the Muslim period than the external decoration.



Fig. 3.64 – Büyük Karatay madrasa portal, Konya (c. 617/1220); side view © R.McClary

Unlike larger structures with long un-buttressed walls, minarets do not need to use timber beams to tie the structure together whilst the mortar slowly dries. This is due to their smaller footprint, and to the inherently stable nature of the cylindrical form

interconnected with a spiral staircase and central column.¹⁹² The structural use of wood is quite common for the floor of the balcony, but the only extant example of a minaret that has a complete separation between the stone and brick elements, through the insertion of timber around the outside edge, is the Melik Sunullah mosque minaret in Eski Malatya (c. first quarter of 7th/13th century).¹⁹³ Although there is clear evidence of decay to the exterior surface of the wood (fig. 3.66), the minaret shaft is still standing, and does not have the inclination seen in several other minarets, such as at Harput, Aksaray and to a lesser extent, Sivas. Losses to the muqarnas projections of the same minaret show the use of horizontal timbers to reinforce them and return some of the load of the *şerefeli* (balcony) floor to the central core of the shaft (fig.3.65).¹⁹⁴



Fig. 3.65 – Melik Sunullah Mosque minaret, Eski Malatya (c. early 7th/13th c.); upper section of shaft © R.McClary

¹⁹² The Eğri minaret and Kesik Minare mosque minaret in Aksaray still stand, while the mosques to which they were originally attached no longer survive.

¹⁹³ Allen (1986), p.53 refers to the dome of the mosque at Dashti being tied together with a chain of timbers to bind together the base of the dome. It may be that a similar idea was being employed in the Malatya minaret. Sinclair (1989), Vol. 3, p.10 dates the structure to 1394 CE but the minaret appears to predate the mosque.

¹⁹⁴ The same method of reinforcement can be seen in Iranian minarets of the 6th/12th century, such as the Gulpāyagān minaret (c.1100 CE). See Pope (1981), pl.361 B for an image of the minaret.



Fig. 3.66 – Melik Sunullah mosque minaret, Eski Malatya (c. early 7th/13th c.); transition zone
© R.McClary

Another example of the use of wood in minarets can be seen at the base of the shaft on the east side of the Eğri minaret in Aksaray, built during the rule of ‘Alā’ al-Dīn. There is a small opening above the door, with a flat wooden lintel to transfer the load from the shaft above away from the window void (fig. 3.67).¹⁹⁵



Fig. 3.67 – Eğri minaret, Aksaray; lintel in shaft (above door) © R.McClary

¹⁹⁵ The lintel has a 3:1 ratio of wood length to the size of the opening it covers, and the wood is one brick course thick. This ratio is not restricted to this minaret and appears in other examples of 7th/13th century Rūm Saljūq brick architecture, such as the wood lintel over the door of the Seyyid Mahmud Hayrani tomb in Akşehir (1228 CE).

There is further evidence of the use of wood in the construction process of minarets, especially those with muqarnas projections below the *şerefeli*, even though the wood itself would have been removed upon completion of the structure. Between the band of decoration and the blind arches below the muqarnas of the Eğri minaret there is a band of square holes, while the Great Mosque minaret in Sivas has a band of round ones. They provide light and ventilation but their original purpose was most likely to have been scaffolding putlog holes. They are similar in size, shape and location to the band of scaffold holes at the base of the muqarnas projections of the coeval brick built minaret of the Qumriyya mosque in Baghdad, dated to 1228 CE.¹⁹⁶ These examples show how the need for temporary supports, to allow for the construction of the upper projecting section of the minaret, resulted in a permanent feature of the structure which performs a new function.

Exposed structural use

The use of exposed timbers in otherwise uninterrupted brick walls, and at points of transition, either as an impost block between a capital and the springing of an arch, or from a square to a polygonal form, is a technique commonly employed in earlier Byzantine architecture.¹⁹⁷ It is a technique that is employed predominantly in the western part of the Rûm Saljûq sultanate, presumably because of the presence of craftsmen trained in the indigenous Byzantine architectural tradition. The technique is particularly prominent in the 7th/13th century buildings in Akşehir, north-west of Konya. The Great Mosque in Akşehir (607/1210)¹⁹⁸ is a predominantly brick-built structure which also employs a number of mismatched marble columns and capitals that are spolia from Byzantine churches. The building makes extensive use of exposed structural timberwork, with wood impost blocks, and bracing tie-beams between the arches (fig. 3.68). The use of visible beams set into a brick dome at two different levels was a standard element of Byzantine construction practice¹⁹⁹ that

¹⁹⁶ Janabi (1982), p.204. There are six in a row on the Qumriyya mosque minaret, all measure 15cm x 15cm.

¹⁹⁷ Ousterhout (1999), p.211. Wooden ties were often used across the springs of arches. They had no role once the mortar had hardened, but they remained in place and were often decorated.

¹⁹⁸ See Meinecke (1976), Vol. 2, p.24 for a ground plan of the mosque.

¹⁹⁹ Ousterhout (1999), p.214. A comparable example is the two rows of beams in the attenuated naos dome of the Katholikon of the Chilandar monastery.

continued into the Islamic architectural tradition in the western regions of the Rūm Saljūq sultanate. Examples of this technique can be seen at the Akşehir Great Mosque, where beams are set into the brick walls at the points of transition of the dome over the area in front of the *mihrāb* (fig. 3.69).

Although there are projecting wooden beams around the courtyard of the hospital in Sivas, discussed in detail in the next chapter, their function remains unclear. The use of exposed timbers in a structural role is not seen to any great degree, in either the Persianate brick buildings or the more Armenian- and Syrian-style stone structures, built in the east of the sultanate. It appears to be a regional element that is an echo of the previous Byzantine tradition which was employed locally, but which did not enter the broader canon of Rūm Saljūq architecture that was being synthesised in the early 7th/13th century.²⁰⁰



Fig. 3.68 – Great Mosque, Akşehir (607/1210); interior © R.McClary

²⁰⁰ Rogers (1972), p.3 agrees with Van Berchem's observation that there is a stylistic dividing line running roughly north-south along the Kızıl Irmak, separating central and south western Anatolia from the east.



Fig. 3.69 – Akşehir Great Mosque (607/1210); dome zone of transition © R.McClary

Numerous mosques built in the second half of the 7th/13th century employ large tree trunks as columns to support the roof. Although none of the large-scale buildings date from the period of study, earlier smaller examples in other regions to the east do survive.²⁰¹ There are two small wooden mosques in Çarşamba, near Samsun, the Gökceli and the Yaycılar, that date from the very beginning of 7th/13th century.²⁰² The early wooden mosques of this kind, built in the Black Sea coast area, drew on

²⁰¹ See Hayes (2010) for a survey of the main examples of timber mosques; p.24 refers to the Great Mosque in Khiva having had wooden columns, in addition to the 4th/10th century reports by Maqdisi of mosques in Khwārazm being built of wood from the start.

²⁰² *Ibid.*, p.9.

the local tradition of vernacular residential architecture, and are very different from the later more monumental structures.²⁰³ They were constructed using the round log technique (*karaboğaz*), with the logs set on stones at ground level rather than on true foundations.²⁰⁴ The use of a central post to support the roof, as seen in the Yayıclar mosque, was a technique previously employed by Turkic people in Central Asia. The use of an engraved wooden post in the centre of a wooden frame is the basis of the *yurt*, and the earliest mosques in the Tajikistan region, dated to the 4th/10th and 5th/11th centuries were built with wooden posts as well.²⁰⁵ The significance of the wooden mosques is that they represent a Turkic architectural survival which had passed from Central Asia, through the brick tradition of Iran, and re-emerged in the coastal forests of the northern coast of Anatolia where timber was in plentiful supply.

Another major structural use of wood was for the roof beams of buildings, including mosques. The Sivas Great Mosque still has a wooden roof, although the current structural elements are 20th-century additions, and there was a suspended wooden ceiling in the Konya kiosk, but it has not survived.²⁰⁶ The photograph by Gertrude Bell (fig. 3.19) shows that elements of the wooden structure of the roof were still in place in the early 20th century.

The decorative use of wood

The decorative use of wood in a functional capacity contributed greatly to the overall aesthetic of structures. Portals in particular lose a large degree of their character once the doors are removed, as they were often the most decorated element of the ensemble. The Great Mosques of the 6th/12th century are generally quite plain structures, and the Kayseri example is no exception, although it was extensively rebuilt in the Ottoman period. In contrast to the unornamented stone, the door (*c.* late 6th/12th to early 7th/13th c.), being the initial point of physical contact with the

²⁰³ Kuniholm (1994), p.409 dates two other mosques in Çarşamba through dendrochronological analysis of timbers, the Gökçeli mosque (1206 CE) and the Yayıclar mosque (1206 CE). For a survey of the surviving wooden mosques in the region see Naza-Dönmez (2008).

²⁰⁴ Naza-Dönmez (2008), pp.1-2.

²⁰⁵ See *Ibid.*, p.4 for the Oburdan and Kurut mosques as well as later examples in Bukhārā and Samarkand. For a view of the interior of the Yayıclar mosque see *ibid.*, p.11, fig.4.

²⁰⁶ Hayes (2010), p.145 quotes Önge (1975), pp.179-95, stating that there were two types of 7th/13th century ceilings in mosques: suspended ceiling and coffered joist ceiling.

structure, is richly decorated (fig. 3.70) and its absence makes the mosque appear far more plain than it would have done originally.²⁰⁷ The door features hexagon-based strapwork, a band of cursive epigraphy and a narrow band of curvilinear patterns around the edge.



Fig. 3.70 – Kayseri Great Mosque door (c. late 6th/12th to early 7th/13th c.) © R. McClary

²⁰⁷ The door is now in the Etnografya Müzesi (Ethnography Museum) in Ankara, accession number 11927.

Timber and microarchitecture

The wooden accessories of the building can either repeat the patterns seen in the stone, or, as in the Kayseri example, provide a surface for the patterns when the stone is not decorated. A Saljūq era wooden *mihrāb* from the Taşhun Paşa mosque in Ürgüp Damsa village demonstrates the close relationship between stone and wood architectural elements. The overall form, and the *cavetto*, roundels, geometric patterns and engaged columns, all give it the appearance of a miniaturised portal executed in wood (fig. 3.71).²⁰⁸



Fig. 3.71 – Taşhun Paşa mosque wooden *mihrāb* (c. 7th/13th c.) © R. McClary

²⁰⁸ The *mihrāb* is now in the Etnografya Müzesi in Ankara, accession number 11541.

The 6th/12th century *minbars* of Anatolia represent another point of transition between furniture and architecture, and may be considered as examples of microarchitecture. The one in the citadel mosque in Konya, made by Mengībirtī al-ḥājī al-Akhlātī in 551/1155, has been described by Redford as the earliest dated example of Rūm Saljūq art (fig. 3.72),²⁰⁹ although the Aksaray *minbar* discussed below appears to be slightly earlier. It features formal, decorative and calligraphic elements which are seen on later architectural decoration in stone, wood and glazed tiles. The patterns employed on the Konya *minbar* integrate rectilinear geometric patterns with curvilinear vegetal forms in a manner not seen on stone portals until much later. An example is the portal of the ‘Izz al-Dīn Kay Kāwūs I hospital in Sivas.²¹⁰ The ‘Alā’ al-Dīn mosque in Ankara has a late 6th/12th century *minbar* (594/1196-7)²¹¹ with a style of polylobed arch decoration which is very similar to the earlier *minbar* in Konya. The motif is not unique to the lands of the Rūm Saljūq sultanate, as it was a common motif across the wider Islamic world at the time. There is an early 7th/13th century *minbar* featuring a polylobed arch in the mosque of the Andalusians in Fez in Morocco.²¹² What may be the earliest surviving 6th/12th century Anatolian *minbar* is the one in the Great Mosque at Aksaray which, although it has the same basic form as the other two *minbars*, does not feature a polylobed arch (fig. 3.75). It bears the name of sultan Mas‘ūd I (r.510-551/1116-1156) and has been dated to 548/1153-4.²¹³

²⁰⁹ Redford (1991), pp.55-56.

²¹⁰ See chapter four, pp.285-300.

²¹¹ Sauvaget and Wiet (1937), Vol. 8 p.218. The epigraphy also gives the name of the craftsman, reading: ‘*amal Ibrahim ibn Abī Bakr Rūmi al-najjār*’.

²¹² Carboni (1998), p.60, fig.50 shows the minaret in 1943 and suggests a date of c.1203-1209 CE. *Ibid.*, p.57, fig.45 shows the same motif on the *minbar* dated to 1144 CE in the Qarawiyyīn mosque in Fez. For an explanation of the process of constructing a *minbar* see Bloom (1998).

²¹³ Rogers (1976), p.101. The name of the *mi‘mār* of the Aksaray mosque and *minbar* is Ṣalāḥ al-Dawla Zayn al-Ḥāj Khw[ā]ja Nūshtekīn al-Jamālī.



A: $\frac{3}{4}$ view

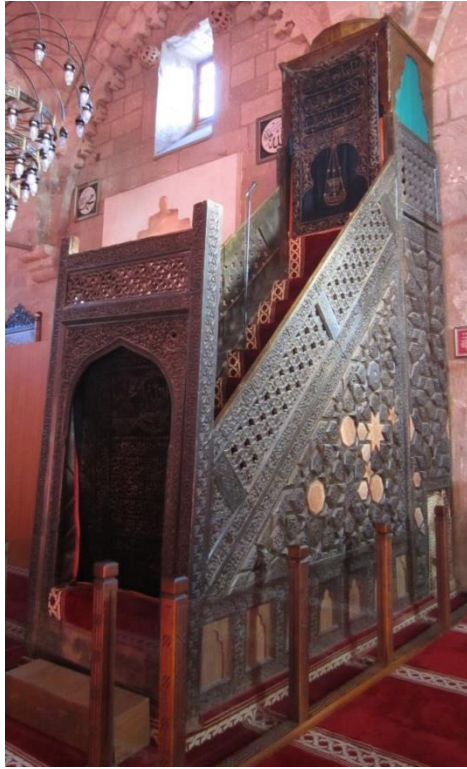


B: Entrance arch detail



C: Side panel detail

Fig. 3.72 – Kılıç Arslan II *minbar*, Konya (551/1155) © R. McClary



A: $\frac{3}{4}$ view



B: Entrance detail



C: Side panel detail

Fig. 3.73 – Great Mosque *minbar*, Aksaray (548/1153-4) © R. McClary

Scaffolding and form work

Aside from the square and round holes for scaffolding, seen at the top of minaret shafts, it may be assumed that there was extensive use of wooden pole scaffolding for the construction of the wider corpus of buildings. The scaffold poles would have been lashed together with ropes, and then tightened by hammering in wooden wedges.²¹⁴ In addition, barrel vaults, of the kind seen in the east and west ends of the south *riwāq* of the ‘Izz al-Dīn hospital in Sivas, may have been constructed over wooden centring set on scaffolding in order to speed construction. There would have been a significant time advantage, as there was no need to wait for the mortar to cure prior to increasing the load by adding another course. Such a system would have also ensured a consistent arch profile. The form may well have been reused from one section of the vault to another, as is known from the earlier Byzantine practice.²¹⁵ As well as scaffolding, the presence of large stones at a great height in a number of the buildings act as evidence for the use of lifting machines, which would have been constructed primarily of wood, and either hand turned or operated by way of a treadmill wheel. They must have also included metal and rope elements, although none survive.

Timber: conclusion

The standard cavity size for the insertion of timbers in walls in Byzantine architecture is 15cm x 15cm,²¹⁶ which is the same size as the scaffold putlog holes found at the top of minarets in Anatolia and Iraq. This use of Byzantine standards on Iranian-style buildings indicates the longevity of the standards established in the Byzantine tradition, even when the formal, functional and decorative natures of the building bear no relation to that of Byzantine architecture.

The transportation of large timbers must have been a considerable undertaking, but there is little evidence of how this was done. One contemporary source, by Ibn Sa‘īd, refers to floating pine lumber down the river (from forests located between Amasya

²¹⁴ Salzman (1952), pp.319-320.

²¹⁵ Ousterhout (1999), p.218. The centring was covered with plaster and the bricks were set in place. Examples remain which have the imprint of the wood on the remaining surface (see *ibid.*, p.219, fig.180). See *ibid.*, p.219, fig.179 for a drawing of the centring system.

²¹⁶ *Ibid.*, p.212.

and Sinop) northward to Sinop, for use in building the arsenal.²¹⁷ Transport by river would have been the most time- and cost-effective method where it was possible. However, it would be of limited use over much of the dry Anatolian plateau, indicating that horse-drawn road transportation must have been the most common means of getting timber from forests to urban construction sites. As well as having a significant role in the domestic construction industry, timber was also an important source of export trade revenue for the Rūm Saljūq economy. It was transported across Anatolia, and exported through the port at Antalya to Ayyūbid Syria and Egypt.²¹⁸

A report of a large timber yard in Baghdad²¹⁹ suggests that other major cities would have had similar stores and timber merchants. Such a facility would have bridged the gap between the harvesting and processing of the raw material on the one hand, and the supply of timber for the construction trade on the other. The organization of the business of supplying and transporting materials remains poorly understood because of the lack of sources. However, the ongoing process of bridge replacement and caravanserai construction can only have facilitated the easier and safer movement of both workers and materials across Anatolia.

Close visual analysis of the surviving corpus of buildings has shown that the practice of using exposed timber tie-beams in brick-built buildings is only encountered in the western regions of the Rūm Saljūq sultanate. As a well-established Byzantine technique,²²⁰ it did not extend into the Armenian areas of eastern Anatolia, which had a primarily lithic architectural tradition, and does not appear to be used east of Konya.

²¹⁷ Cited in Redford (2000), p.83.

²¹⁸ Rogers (1995), p.965.

²¹⁹ Richards (2007), p.342. The translation of Ibn al-Athīr's *al-Kamil fi l-Ta'rikh* states that a fire in the store yards in 583/1187 destroyed large stocks of timber.

²²⁰ See Ousterhout (1999), p.214.

IRON

Of all the materials used in the construction process, iron is the one present in the smallest amounts, yet it is a material that is of the utmost importance. This is due to the need for sharp and strong tools made of iron, in order to cut, quarry, and shape the raw elements and finished materials which constitute the built environment.

Structural uses of iron

The primary use of iron in the fabric of the buildings was in the form of nails, used to affix wood elements together. Large numbers have been excavated in an architectural context, along with remains of wood, at Gritille, south of Malatya on the banks of the Euphrates. The nails generally feature a tapering square shaft of c.10cm in length with a rounded flat head.²²¹ Iron nails have also been excavated from under the west iwan of the Büyük Karatay madrasa in Konya (fig. 3.74), demonstrating that, limited examples notwithstanding, there was widespread use of iron nails during the period of study.



Fig. 3.74 – Iron nails, excavated under the west iwan, Büyük Karatay madrasa, Konya
© R. McClary

²²¹ See Redford (1998), p.169, fig.4.2 and plates 4.3 to 4.5; on p.161 he states that large numbers of nails were also excavated at Samsat, but these are not as well published.

The use of large iron cramps to hold marble blocks together is a structural technique used in the Byzantine building tradition.²²² As it is an internal system, there would usually need to be extensive loss to the fabric of the building in order to see them if they were installed at the time of construction. Owing to the lack of visible mortar lines, it is likely that the two marble portals in Konya feature such a system, but there is no direct evidence. The only visible example is to be found in Sivas, in the entrance of the Gök madrasa (670/1271-2). The cramp is secured by being placed into an oversized hole drilled into each block and set in lead. It is visible only because sections of the marble block have come away, either due to water entering through cracks and freezing, the iron rusting and expanding, or a combination of the two factors (fig. 3.75). Like some of the internal structural uses of wood, techniques developed in the long Romano-Byzantine tradition of building can be seen to have continued long after the external aesthetic for which they were originally developed had changed beyond all recognition.



Fig. 3.75 – Gök madrasa, Sivas (670/1271-2), iron cramp © R. McClary

Decorative uses of iron

Alongside the structural use of iron, there were also decorative uses, some of which still retained a degree of functionality. Although most of the original wooden doors and window shutters have not survived *in situ*, an early 7th/13th century example in

²²² Ousterhout (1999), pp.212-214 describes the various sites where the cramps are used. They only appear to be used with marble, and the most common location is to tie together the blocks of the dome cornice of churches, such as the Fatih mosque in Enez. *Ibid.*, p.215, fig.175 shows cramps set in lead that are almost identical in shape and size to the ones in Sivas.

Konya retains flower-like decorative roundels that accentuate the carved wood decoration (fig. 3.76).²²³ It may be assumed that the hinges and latches, as well as knockers, were also iron. There are also surviving examples of doors covered with a skin of sheet metal and accented with metal strips.²²⁴ These were used for defensive purposes, in the case of city gates, as well as for decoration.



Fig. 3.76 – Rūm Saljūq iron stud in a wooden window shutter; now in Konya Taş Müzesi
© R. McClary

In addition to the purely functional and unornamented iron elements, there are a few surviving examples of more decorative iron fittings. Like some of the Rūm Saljūq stone portals²²⁵ and Georgian wooden doors,²²⁶ there are examples of *ajouré* bosses. An example on a door panel from the ‘Alā’ al-Dīn mosque in Ankara features a boss,

²²³ The item is displayed in the Taş ve Ahşap Esleri Müzesi in Konya (original location unknown).

²²⁴ *In situ* examples include the city gates of Diyarbakır (Āmid).

²²⁵ See chapter two, pp.37-94.

²²⁶ See Mepisashvili and Tsintsadze (1979), p.292 for an image of a wooden door with pierced bosses from the first quarter of the 11th century CE.

along with drilling and linear incisions in the flat sections, which end in a leaf-like shape (fig. 3.77).



Fig. 3.77 – ‘Alā’ al-Dīn mosque, Ankara (c. 594/1196-7); door panel iron fittings detail
© R. McClary

Iron tools

It is arguably the tools, rather than the nails and cramps, which represent the most important uses of iron in the construction process. Without the tools there would not be any mining, quarrying, or cutting of the materials with which the buildings are constructed. Little is known about the precise tools used by the craftsmen in Anatolia²²⁷ but, unlike the visual aesthetic, the tools used by stone masons remained unchanged from the Roman period until the 19th century.²²⁸ Examples of the kind of tools likely to have been used in the Rūm Saljūq period can be seen in the Antalya Museum (fig. 3.78). In addition, tool marks on the surface of ashlar can also provide clues as to the types of tools used to work the material.²²⁹

Like all the other processes involved in the construction of buildings in the Rūm Saljūq sultanate, especially the more monumental structures which are the ones that tend to survive, the production of metal objects would have involved a large number of people. Once the ore had been mined, it would need smelting, in order to refine the metal, and then transporting to the production site. Either on site or in nearby workshops, the various objects would be forged or cast, following which they would require installation. Although there may have been some overlap, it is likely that each major process would involve a different group of labourers and craftsmen.

²²⁷ Arık (2007), pp.496-497 notes that excavations at the palace at Beyşehir revealed a small workshop with a forge and blacksmith's tools, but the tools remain unpublished.

²²⁸ Salzman (1952), p.331. Although the author refers to the situation in England, the Roman source also applies to Anatolia, and masons there can still be observed working with the same types of tools in the restoration of stone structures of the 7th/13th century.

²²⁹ See stone section above, pp.156-165.



Fig. 3.78 – Stone masons tools (Antalya Museum) © R. McClary

Architectural uses of brass and bronze

Aside from the metals used in the production of glazes, and the use of lead with the iron cramps, there are occasional examples of objects made of brass and bronze. These are both copper alloys, along with varying ratios of other metals, generally zinc or tin. There are limited survivals from an architectural context, particularly in the Rūm Saljūq lands. One of the two door knockers of the Artuqid Great Mosque in Cizre, a city in south-east Anatolia, dating from the early 7th/13th century, is now on display at the Türk ve İslam Esleri Müzesi (Turkish and Islamic Arts Museum) in İstanbul.²³⁰ The dragon is recognised to have been a powerful protective device, and the use of two pairs on the doors of a mosque fits with this understanding of the symbolic meaning of the motif.²³¹

The knocker in İstanbul features extensive brass surface decoration, much of which appears to have been taken from an earlier location, with low-relief animal and

²³⁰ Tuğral (1996), p.187 gives the size of each door as 300cm x 120cm. Similar examples are also held in the Islamic Art Museum in Berlin (Inv. No.1.2242) and in the Khalili Collection (see Charbonnier (1995), p50-51. For a discussion of these types of door knockers see Bilici (2006), pp.111-122.

²³¹ Kuehn (2011), p.10.

human figures hammered flat prior to its reuse on the door.²³² It has been argued by Tuğral that such reuse may indicate a shortage of materials in the south-east of Anatolia in the early 7th/13th century.²³³ However, iron (Ar. *ḥadīd*) was plentiful near Ḥānī, in the mountains north of Silvan, and was transported over large distances from there. In 516/1122 a copper mine was discovered nearby, at Dhū'l-Qarnayn.²³⁴

In addition, the door has its cast and engraved bronze door knocker, in the form of twin intertwined dragons, still attached (fig. 3.79 A). The knocker in İstanbul has been subjected to gamma radiation in order to gain an understanding of the internal structure. The resulting image shows a significant internal flaw in the casting process of the left-hand dragon (fig. 3.79 B). This single flaw has been used to suggest more general problems in the manufacturing and casting business in the region during the period prior to the Mongol invasion.²³⁵ Although such a situation is a possibility, one example does not constitute a trend. The lack of any external evidence of the flaw demonstrates that the casting was deemed fit for purpose at the time, and it has not cracked during centuries of use. The knocker held in İstanbul has been cleaned recently. Its pair, now in the David Collection in Copenhagen, although incomplete, lacking the central lion head, retains its original patina (fig. 3.79 C).²³⁶

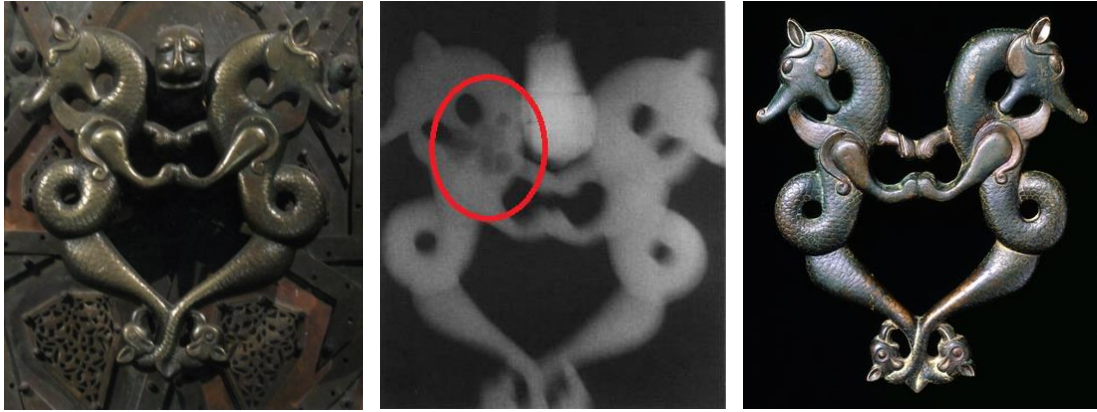
²³² Tuğral (1996), p.187. The patterns were revealed by X-rays of the door. See *Ibid.*, pp.190-192, figs.5a, 5b and 6. Ölçer (2005), pp.399-400 argues that the reused metal sections date from a later repair to the doors, based on the use of different wood on the lower section. It is possible that the original metal was removed, and replaced over the new wood.

²³³ *Ibid.*, p.193.

²³⁴ Hill (1974), p.277 states that a large amount of iron was shipped from Ḥānī to the Caliph, for a bridge over the Tigris in 570/1133.

²³⁵ Tuğral (1996), p.193.

²³⁶ See http://www.davidmus.dk/en/collections/islamic/dynasties/late-abbasids/art/38_1973 (accessed 6/5/2014). The accession number is 38/1973 and the knocker measures 27.5cm high x 24.5 cm wide.



A: İstanbul example

B: Gamma Radiograph with flaw²³⁷ C: Copenhagen example²³⁸

Fig. 3.79 – Cizre Great Mosque door knockers

A drawing and description of the production process for a door and knocker for the Diyarbakır palace, which is almost identical to the ones from Cizre, survives in the *Kitāb fī ma'rifat al-ḥiyal al-handasiyya* (Compendium of Science and Useful Practice in the making of Mechanical Devices). It was written in Diyarbakır (Āmid) in the late 6th/12th century by Ibn al-Razzāz al-Jazarī.²³⁹ In the final section of the book, al-Jazarī describes the lion's head and neck as being the extension of an iron staple nailed to the door. He goes on to describe the casting process, which involved the creation of a wax model which was encased in clay. The mould was heated to melt the wax and remove any water from the clay, before it was filled with molten brass (Ar. *shabah*).²⁴⁰ The text is a rare example of a description of the methods of craft production of the period, and it has been described as the earliest manual of engineering practice.²⁴¹

²³⁷ After Tuğrul (1996), p.193, Fig.7.

²³⁸ http://www.davidmus.dk/en/collections/islamic/dynasties/late-abbasids/art/38_1973 (accessed 6/5/2014) is the image source, © The David Collection, Copenhagen.

²³⁹ See Hill (1974) for a translation of the Bodleian Library MS. Graves 27, dated 891/1486, a copy of a text dating from 742/1341. The drawing in *ibid.*, p.195, fig. 148 shows the same lion's head and scaly twin dragon bodies as the Cizre knockers.

²⁴⁰ *Ibid.*, pp. 194-195.

²⁴¹ *Ibid.*, p.279.



Fig. 3.80 – Artuqid *dirhām* (539-562/1144-1167), featuring double dragon motif²⁴²
© American Numismatic Society

The same intertwined affronted dragon motif can also be seen on the Artuqid coinage of the 6th/12th century as well as the Bāb al-Tilism in Baghdad. Unusually, for a coin minted by an Islamic dynasty, a bronze *dirhām* datable to 539-562/1144-1167 appears to feature Christ enthroned as well (fig. 3.80).²⁴³ It is clear that the twin dragon motif was employed in metal across a wide array of scales, from the large three-dimensional door knockers on a palace and a Great Mosque, to the small two-dimensional image on the coinage.

Although the Artuqids were independent of the Rūm Saljūqs in the 6th/12th century, the ruler during the period that al-Jazarī was based at the court in Diyarbakır was Muḥammad ibn Qara Arslān (r.562-81/1167-85), the son-in-law of Kılıç Arslān II.²⁴⁴ Subsequently, in the early years of the 7th/13th century, the Artuqids became vassals of the Rūm Saljūqs,²⁴⁵ making it possible that the mines at Ḥānī were one of the sources of the iron used in the Anatolian buildings of the period.

²⁴² Image source: <http://numismatics.org/collection/1959.102.17> (accessed 16/7/2014)

²⁴³ The reverse of the coin features the name of the Artuqid ruler Qara Arslān ibn Artuq / ibn Dāwūd al-Malik al-ʿAlim al-ʿĀdil Fakhr al-Dīn. It is in the collection of the American Numismatic Society, # 1959.102.17.

²⁴⁴ Mecit (2014), p.74.

²⁴⁵ Bosworth (1996), p.195.

CRAFTSMEN

Introduction

The preceding analysis of the materials, and the methods of combining and manipulating them, can be used to delineate a methodological framework for determining the processes required to build large-scale mixed-media construction projects.²⁴⁶ With little or no documentary evidence surviving regarding the construction process, such an approach provides a way to understand the range of skills, materials and processes involved.

Muslim craftsmen

The *nisba* is rarely proof of where a craftsman trained,²⁴⁷ leaving analysis of the working methods and decorative motifs as the primary tools for understanding the origins and techniques of the craftsmen. As has been seen in the previous two chapters, the close stylistic and formal connections between Iran and Anatolia demonstrate the movement of individuals trained in the brick building and glazed decorating traditions of the areas to the east. In addition, there is stylistic evidence of the introduction of Aleppine hardstone building techniques being introduced by Muḥammad ibn Khawlān al-Dimashqī in Konya in the early 7th/13th century, but there is no epigraphic or stylistic evidence for the presence of Syrian masons prior to that date.²⁴⁸

Christian craftsmen

Although there is a dearth of names and mason's marks pertaining to Armenian craftsmen on the Islamic buildings of Anatolia,²⁴⁹ absence of evidence is not, in this

²⁴⁶ The specific focus here is on the situation in Anatolia in the 6th/12th and 7th/13th centuries, but the principle of analysing the constituent elements of the building is applicable to much of the pre-modern world.

²⁴⁷ Rogers (1972), p.446. He goes on to state that mason's marks are an equally unreliable index.

²⁴⁸ Abū 'Alī al-Ḥalabī ibn al-Kattānī, presumably from Syria if his *nisba* is any guide, worked on the walls of Sinop in 611/1215, but there is nothing distinctively Syrian or Aleppine about the work he did. See Redford (2010), p.131. See appendix 3.3 for the full corpus of craftsmen named in epigraphy during the period covered in this study.

²⁴⁹ Rogers (1995), p.966.

case, evidence of absence, on whether Armenians were involved in the construction of stone buildings in the region. Most buildings feature only one name, if there are any craftsman named at all. Given the numerous similarities between contemporary Armenian church architecture, and the architecture patronised by the Turko-Muslim elites of Anatolia (especially the tombs)²⁵⁰ it is quite likely that Armenian stone masons were involved. In addition, it is very unlikely that, during the early period, any of the Turkic nomads would have had stone-working skills. It is possible that Christian workers, both skilled and unskilled, were recruited and operated under the direction or fiduciary control of a Muslim *amīr*, craftsman or site manager. It remains to be seen whether or not this was a result of their *dhimmī* status, as the nature of the guilds, site management and architectural design process in the 6th/12th and 7th/13th centuries in Anatolia remain clouded in uncertainty.²⁵¹

One of the clearest examples of the transfer of motifs and techniques from the Muslim tradition into Armenian architecture can be seen at the church of St. Hovhannes Mkrtitch (St. John the Baptist), in Gandzasar (3.81 A).²⁵² Construction of the church started in 1216 CE, a year before the foundation of the hospital of ‘Izz al-Dīn in Sivas, and was completed by 1238 CE.²⁵³ The building has several identifiably Islamic elements on the interior and exterior, with the eastern façade of the church featuring two V-shaped recesses which are crowned with polylobed arches with trefoil pendants (fig. 3.81 B). These are almost identical to the wooden examples seen on wood *minbar* entrances of the 6th/12th century across Anatolia.²⁵⁴ In addition, the exterior of the central drum section has intaglio patterns of split palmettes in rectilinear and curvilinear panels (fig. 3.81 C). The element of the building that can be most closely associated with earlier Islamic structures is the

²⁵⁰ A clear example can be seen in the style of roof used on the Mama Khātūn tomb (c. 596/1200), in Tercan. See above, fig.2.70 L.

²⁵¹ The division of roles in the upper echelon of the construction business remains unclear. See Rogers (1972), especially pp.296-367 and pp.400-418 for a good attempt to determine what can be known from the limited sources. See Snelders (2010), pp.90-92 for details of mixed Muslim/Christian workshops in the Mosul area during the period of study.

²⁵² The church is located c.40km north-north-west of Stepanakert, in the disputed territory of Nagorno-Karabakh.

²⁵³ Mkrtchyan (2002), p.123. Eastmond (2004), p.92 states that the church was founded by the Christian Armenian king of Khachen, Hasan Jalāl Dawla / Haykaz (r.1214-1261 CE).

²⁵⁴ A similar motif, in stone, can be seen on arches in the courtyard of the Zinciriye madrasa in Diyarbakır, built in the late 6th/12th century.

square-plan shallow pyramid skylight inside, which is constructed entirely of muqarnas cells (fig. 3.82),²⁵⁵ as muqarnas do not occur in Armenian architecture prior to the early 7th/13th century. A similar muqarnas skylight survives in the south narthex of the Church of the Holy Apostles in Ani, added in the early 7th/13th century.²⁵⁶ The presence of this feature, and other muqarnas, indicates the direct involvement of itinerant Armenian masons in the construction of earlier Islamic buildings, located to the west in Anatolia, the lack of epigraphic evidence notwithstanding.

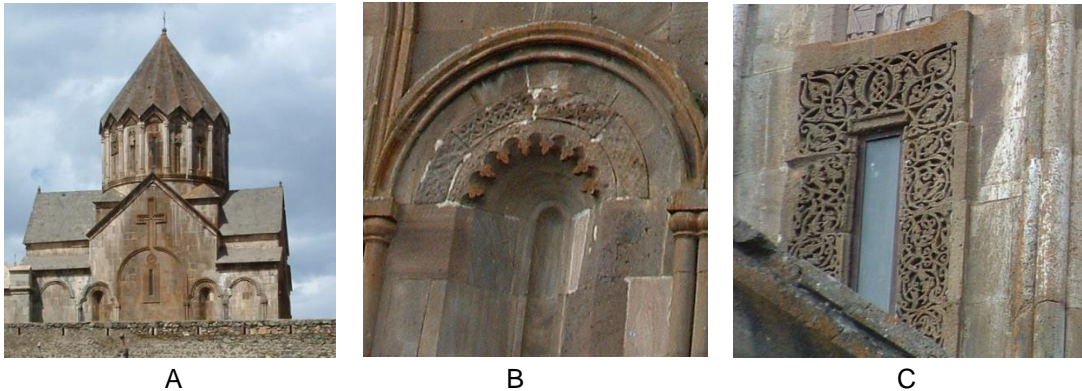


Fig. 3.81 – St. Hovhannes Mkrtych church, Gandzasar, Armenia (1216-38) © R. McClary



²⁵⁵ In addition, the internal walls flanking the altar have steps running up the side, in the manner of those up to the entrance of the Quraysh Baba tomb near Sinanpaşa, Afyon (fig. 2.72.H). The underside of each step has been carved out to form a single muqarnas cell.

²⁵⁶ Eastmond (2004), pp.92-3 states that Ani was liberated from Muslim rule by the Mqargrdzeli family in 1199 CE. Their court was the most mixed of all the dynasties in eastern Anatolia, as they were Kurds who married into Armenian, Georgian and Saljūq families.

Fig. 3.82 – St. Hovhannes Mkrtitch church, Gandzasar, Armenia (1216-38); muqarnas skylight © R. McClary

Processes and role division in the construction trade in medieval Anatolia

Analysis of the data in tables 3.4 to 3.10 demonstrates that, apart from a few simple tasks for labourers and apprentices, most of the roles required a considerable level of skill. Although in many cases the level of overlap is not clear, it may be assumed that nearly all the roles in the production of iron, after the transport of the ore, could have been performed by an individual blacksmith, probably with one or more assistants.

It is inevitable that there was some overlap of roles, and a degree of conjecture is required when dividing the roles between the rather imperfect categories of unskilled, semi-skilled and skilled.²⁵⁷ It may be assumed that, alongside locally hired labourers, there would have been a continuum of learning and development between apprentices, newly qualified, and senior master craftsmen. The more fluid reality complicates the picture, but the three categories can be used to give a sense of the division of roles. The smaller the building project the more likely it would have been that the skilled craftsman would have had to have performed a larger number of different roles, requiring varying levels of skill. In addition, a number of the semi-skilled roles may, with suitable supervision, have been delegated to unskilled labourers if necessary.

In most cases, there is a clear divide between the processes involved in the extraction of the raw materials from the ground, be it ore, wood, clay or stone, and in the manipulation of the materials into structures. In virtually all cases, there would have been a geographical divide between the location of the raw materials and the urban context of the majority of the structures. This divide would have been bridged by the merchants and tradesmen, who profited from the transportation of raw materials from the point of extraction to the urban centres. Unfortunately, very little is known of their activities in the Muslim-ruled areas of Anatolia in the late 6th/12th and early 7th/13th centuries.

²⁵⁷ The skilled category in particular would inevitably have involved varying levels of ability, as well as very different skills, from one material and process to another.

There is hardly any surviving information regarding the fiscal component of the building trade, for either material costs or labour and transportation. Little is known about the wages that a stone mason (Ar. *al-ḥajjār*)²⁵⁸ in the 6th/12th and 7th/13th centuries would have earned. Small clues such as the frequency of the occurrence of *al-Ḥājj* / *al-Ḥājjī* / *Ḥājjī* after the names of numerous masons, on the gravestones of the 7th/13th and 8th/14th century in the cemetery in Ahlat, have been used as evidence to suggest that masons were earning enough money as a group to make the *ḥājj*.²⁵⁹ It has been argued (tentatively) that craftsmen may have been paid according to the surface area they completed.²⁶⁰ Such a situation would fit with the view that it was the master masons who were responsible for the coordination of materials.²⁶¹

Role division hypotheses

In order to refine the understanding of craftsmen, analysis of the different roles involved in the extraction, manufacture and combination of building materials into finished structures has been divided into seven categories. These are for the six main materials: brick; glaze; stone; mortar; timber; and iron, along with one miscellaneous group of roles. This resulted in the identification of 120 roles,²⁶² requiring different skill levels, with the only obvious overlap across materials being their transportation. Within each group, many of the different roles may well have been performed by the same individual, and the precise details of the division of roles will probably never be known. What can be hypothesised is the number of distinct, skilled roles required for the successful completion of each aspect of the construction process, from resource extraction to project completion. For brick construction there were five discernable roles (Table 3.4), for glazed tile, seven (Table 3.5), while stone work required six different skilled roles (Table 3.6). Mortar and plaster also required six (Table 3.7), assuming that brick workers and stone setters would be responsible for

²⁵⁸ Rogers (1988), p.112.

²⁵⁹ *Ibid.*, p.113.

²⁶⁰ Dold-Samplonius (1992), p.193. This view is based on the prevalence of such a method in medieval Italy, and a connection is made with the section in chapter nine of *miftāḥ al-Ḥisāb* (key of arithmetic), where al-Kāshī provides a method for the calculation of the number of bricks required for construction.

²⁶¹ Bakirer (1999), p.57.

²⁶² Several of the processes, such as glaze production and metallurgy, could be sub-divided further, but to do so would add unnecessary complexity and increased conjecture without aiding the understanding of the wider topic. For a study of the various roles, and a list of named individuals, involved in coeval Iranian architecture, see Wilber (1976), pp.31-39.

the final combination of their respective materials with the bonding mortar. Of the nineteen basic roles involved in the architectural use of timber (Table 3.8), there were eight different skilled or semi-skilled roles, while the extraction and manipulation of iron required four skilled roles (Table 3.9). Regarding the miscellaneous and non-media specific tasks (Table 3.10), such as site management, food preparation, and treatment of injuries, seven of the eight roles appear to have required some considerable degree of skill. So, of the total of 120 roles, 43 (or about one third) may be deemed to have required significant levels of training and experience. Such a ratio may suggest a division of the work force into three fairly equal sections: labourers, apprentices with varying levels of experience, and fully trained craftsmen, of which only a few would be masters in their field.

Role (brick)	Unskilled	Semi-skilled	Skilled
Calculate the number of bricks required for the building			x
Select clay			x
Quarry clay	x		
Collect and sieve sand	x		
Transport raw materials to kiln site	x		
Puddle clay with water and let stand		x	
Mix sand into the clay at the correct ratio			x
Fill wood or metal brick moulds		x	
Lay moulds out in the sun to air dry	x		
Gather and transport fuel for kiln	x		
Load bricks into kiln		x	
Fuel kiln and ensure temperature reaches 800°C to 900°C			x
Determine point at which bricks are baked			x
Unload kiln	x		
Grade bricks			x
Transport bricks to building site (if kiln is off-site)	x		
Custom cut corner and detail bricks			x
Distribute bricks around building site and up scaffolding	x		
Lay bricks in courses between beds of mortar			x

Table 3.4 – Processes involved in the production and use of bricks

Role (glaze)	Unskilled	Semi-skilled	Skilled
Mine ores		x	
Transport ores	x		
Smelt various metals for glaze			x
Quarry clay	x		
Transport clay	x		
Prepare clay for moulds		x	
Fill moulds for bricks and form tiles		x	
Gather soda plants	x		
Burn soda plants		x	
Prepare glaze mixtures			x
Gather fuel for kiln	x		
Load kiln			x
Add fuel to kiln	x		
Manage temperature of kiln and length of firing time			x
Paint underglaze designs			x
Apply glaze			x
Cut tiles			x
Transport tiles	x		
Plan overall design			x
Prepare surface		x	
Install tiles			x

Table 3.5 – Processes involved in the production and installation of glazed elements

Role (stone)	Unskilled	Semi-skilled	Skilled
Quarry stones		x	
Select stones			x
Rough shaping and dressing		x	
Transport of building stones and rubble	x		
Site levelling	x		
Run string lines and survey site			x
Dig foundations	x		
Finish dress ashlar			x
Cut mouldings, voussoirs and patterns			x
Design and create stereotomic muqarnas hoods			x
Carve figural sculptural elements			x
Carve marble epigraphic panels			x
Install ashlar			x
Place rubble and mortar infill	x		
Build, install and operate lifting machines		x	
Erect scaffolding		x	
Move stone and mortar around site	x		

Table 3.6 – Processes involved in stone construction

Role (mortar)	Unskilled	Semi-skilled	Skilled
Quarry limestone and gypsum		x	
Gather aggregates	x		
Sieve and grade aggregates		x	
Transport materials to site	x		
Burn lime		x	
Dig pits	x		
Prepare mortar and leave to slake			x
Rehydrate mortar		x	
Add aggregates as binders and pozzolans		x	
Move mortar around site and deliver to craftsmen	x		
Use mortar for setting bricks into walls and vaults			x
Incise patterns in the mortar joints			x
Use mortar for rubble infill and setting ashlar			x
Apply to vertical surfaces and domes as finish layer			x
Paint external surfaces with geometric patterns			x
Make stucco moulds			x
Fill stucco moulds		x	
Install stucco panels			x
Carve epigraphic inscriptions			x

Table 3.7 – Processes involved in the production and installation of mortars

Role (timber)	Unskilled	Semi-skilled	Skilled
Determine the amount of timber required			x
Select the trees			x
Fell the trees			x
Limb the trees	x		
Gather poles for scaffolding	x		
Rough cut timber for transport		x	
Transport timber	x		
Stack timber for drying	x		
Cut timbers with two-man saw			x
Shape and notch timbers with adze and axe			x
Precision cut sections for doors, shutters and <i>minbars</i>			x
Carve patterns and calligraphy into panels			x
Cut and assemble <i>kundakiri</i> sections			x
Move timbers around construction site	x		
Install tie beams into walls		x	
Rough cut wood for scaffold planks, bracing and centring	x		
Erect arch vault centring and scaffolding		x	
Build and erect cranes and other lifting machines			x
Design and install roofing systems			x

Table 3.8 – Processes involved in the preparation and use of timber

Role (iron)	Unskilled	Semi-skilled	Skilled
Mine iron ore		x	
Transport the ore	x		
Smelt the ore to produce iron			x
Transport ingots	x		
Gather fuel for forge	x		
Load fuel and operate bellows		x	
Determine furnace temperature			x
Forge and shape iron objects			x
Temper iron objects			x
Make clay models of items			x
Make mould of item			x
Cast and finish item			x
Fabricate component parts			x
Incise patterns into the finished object			x
Produce steel for tool edges			x
Sharpen tools		x	
Move metal objects around site	x		

Table 3.9 – Processes involved in the production of iron objects

Role (miscellaneous)	Unskilled	Semi-skilled	Skilled
Fiduciary management – paying wages and suppliers			x
Site Management – co-ordinating different trades			x
Chef – food preparation		x	
Leatherworker – making and repairing gloves and aprons			x
Scribe – writing contracts and laying out epigraphy			x
Doctor – treating worksite injuries			x
Delivering water for drinking and mortar production	x		
Remove waste materials from site	x		

Table 3.10 – Miscellaneous site roles

Staff and role division in early 7th/13th-century Sivas

To give a more concrete sense of site organisation, and as a prelude to the detailed analysis of the hospital and tomb complex founded by ‘Izz al-Dīn Kay Kāwūs I 614/1217-18 (the subject of the next chapter), an estimate of the numbers and types of skilled craftsmen involved in its construction follows. This large complex is an example of royal patronage on monumental scale dating from the end of the period of this study. The construction of the hospital involved all the major materials and

processes discussed above, and thus makes a good prism through which to attempt to understand the working environment of the time.²⁶³

Given the polluting nature of the process of brick production, with large kilns burning night and day, it is likely that the bricks were produced at a more remote location, and transported into the centre of the city.²⁶⁴ There must have been experienced brick cutters and layers, and it is likely that the individuals laying the bricks would also have struck off the surplus mortar and pointed the mortar joints. The difference in the ground plan of the brick walls on either side of the north iwan suggests that at least two groups of bricklayers were involved from the very beginning of the construction process, when the foundations were first being laid out. The need for different grades of mortar means that there would have been individuals to either produce it on site, or possibly transport previously slaked mortar from elsewhere. It was used as a bonding medium for rubble infill, for laying and pointing bricks, setting ashlar, and as a matrix for the areas of glazed tiles. There is evidence of the work of plasterers, who used a particularly fine grade of plaster for skimming over some areas of brickwork and into which patterns were incised. It was also used to finish the areas of plaster around the glazed tiles. There is no evidence to determine whether or not the same individuals were responsible for both tasks, or if the bricklaying and tile working were separate or combined. The clear differences in the carving techniques, and quality of execution of the various plaster incisions, indicates that there were multiple individuals engaged in the process.

The large amount of stone-work in the complex attests to the presence of a significant number of stone masons, trained in the various skills required to dress, cut, carve and set ashlar. It is likely that the most highly skilled members of the team were responsible for cutting the extensive array of geometric patterns around the windows and doors. In addition, there was clearly someone who was particularly skilled at executing figural stone sculpture, of which four examples survive. Given the extent of the glazed tile decoration in the north iwan and the tomb façade, there

²⁶³ To avoid repetition, details and illustrations of all the features referred to in the following section can be found in chapter four.

²⁶⁴ Ousterhout (1999), p.128 refers to contemporary Byzantine practice, but there is no reason to assume that the situation was any different in the Muslim ruled-cities of Anatolia. For the same reasons it is likely that the glazed tiles were produced off-site as well.

were also highly skilled tile cutters and installers involved. These would probably have been under the supervision of Aḥmad ibn Abī Bakr al-Marandī, whose name appears in two cartouches above the west window of the tomb façade, although such a large project would have required a number of masters of the various trades.

There would have been carpenters who shaped, and possibly installed, the internal tie-beams and the exposed beams that project around the upper areas of the courtyard. The same individuals would probably have been responsible for the preparation of the ladders, poles and planks for the scaffolders to erect, as well as the rough wood used to build centring for vault and arch construction. More skilled specialist carvers, possibly working under contract off-site, would have been responsible for items such as doors and window shutters. Unfortunately, none of the originals survive, but they may be presumed to have been similar to a number of the surviving examples from the period (figs. 3.70 and 3.71). It is quite likely that a single blacksmith, along with one or two assistants, possibly off-site, would have been able to produce all the nails, hinges and other fittings required, as well as repair and sharpen tools.²⁶⁵ To assist the skilled craftsmen, a sizable team of labourers, probably recruited locally, would have been required for the numerous unskilled roles on site, such as carrying mortar up the ladders and moving materials around site.²⁶⁶

Regarding the more miscellaneous roles, the importance of the epigraphy suggests that at least one calligrapher would have been involved in the composition of the programme of epigraphy across the building. It is possible that he or they would have worked alongside the stonemasons, in order to ensure that the required text would fit into specific areas, such as over the doorway, where the foundation inscription runs in a band.²⁶⁷ Cooks and a leather worker would have been needed, to feed the workers and to repair the worker's gloves. There would also have been suppliers of

²⁶⁵ In a major commercial centre such as Sivas, it is likely that there was a metalworking district, and there is no reason to assume that the blacksmith had to be working on-site.

²⁶⁶ Some of these roles would probably have been performed by apprentices to the master craftsmen.

²⁶⁷ Bloom (2001), p.178 states that the transfer of designs was greatly facilitated by the use of paper from the late 6th/12th century onwards. It may have been the case that the calligraphers were not on-site, but their presence would have reduced the chance of mistakes by the craftsmen.

rope for the scaffold erectors, as well as for use with the cranes, pulleys and other means of lifting materials.

Although Aḥmad ibn Abī Bakr al-Marandī may be presumed to have supervised the design and installation of the glazed tile elements of the building, there is no clear indication as to who the overall architect and project manager was.²⁶⁸ The lack of epigraphic evidence notwithstanding, there can be no doubt that a royal foundation of such scale and prestige would have had a person, or persons, of some standing overseeing the design and execution of the project, regardless of how the various aspects of the roles were divided.

Craftsmen: conclusion

Analysis of the details of a number of the buildings in the corpus has shown the diverse origins of many of the craftsmen employed in Anatolia in the 6th/12th and 7th/13th centuries. There is a relatively large number of craftsmen's names on the early Turko-Muslim buildings of Anatolia.²⁶⁹ As a result, the notable lack of Christian craftsmen's names on the buildings of the period²⁷⁰ suggests a conscious preference for Muslims, at least in the upper echelon of the construction business. At the same time, there was an increasingly overt Islamic character to the major structures, be it Aleppine in Konya, or Iranian in Sivas and Malatya.²⁷¹ The period saw the introduction of innovative motifs, such as stone muqarnas, and new materials, including turquoise and other colours of glazed tile. These were combined and used to depict the identifiably Muslim associations of the Arabic script on a monumental scale. These disparate elements were all brought together to give the Rūm Saljūq sultanate a distinctive, and distinctly Islamic, appearance. This was generally achieved in stone, which traditionally had been the dominant construction

²⁶⁸ Arık, O. (2008), p.47 suggests that the architect has been identified as Bedreddin, but does not provide any supporting evidence for such an assertion, and the building does not feature any names other than that of the patron, 'Izz al-Dīn, and the craftsman Aḥmad ibn Abī Bakr al-Marandī.

²⁶⁹ See appendix 3.2.

²⁷⁰ A probable exception to the general lacunae of Greek craftsmen/architects names is the name 'Sifistus' on the walls of Sinop, dated to the rebuilding of the walls following the capture of the city by 'Izz al-Dīn in 611/1214. See Redford (2010), p.131.

²⁷¹ This is in contrast to the earlier Great Mosques which, although taking the form required for mosques, tended not to feature either minarets or any overtly Islamic decoration. Such absences may be a result of Armenian craftsmen, with no prior experience of Islamic architecture and decoration, having built them.

material for monumental structures in much of the region, but also very successfully in brick as well.²⁷²

There is not enough evidence to determine the precise division of the numerous roles required to create the corpus under discussion, and in any case the division probably would have varied depending on the scale of the particular project. It may be assumed that the larger the project, the greater the number of employees and the degree of specialisation. Conversely, a small project such as a tomb would probably have involved a small number of people performing all the necessary roles.

Rather than engage in pure speculation with no evidential base, it must be accepted that some things will probably never be known. The evidence of the buildings themselves can be used to extrapolate all the different processes involved, even if the degree of overlap regarding the roles of the craftsmen must remain shrouded in mystery. Certain assumptions may be made regarding the skill level required for the various tasks, which would preclude master masons from performing the jobs of unskilled labourers, but beyond that, little more can be hypothesised with any degree of certainty. The wide array of roles involved in building, especially of the large imperial structures, demonstrates how important the construction process was to the broader economy. The surviving buildings can be viewed as much as social documents, and monuments to the individual craftsmen, as they are indicators of the wealth, prestige and piety of the patrons. The underlying methods, whether from the indigenous Byzantine and Armenian traditions, the Syrian stone-building methods from the lands to the south, or the brick and glazed techniques of Iran, all remained basically unchanged. The innovation lay in the blending of forms and motifs, across traditions and materials, to create a new and unique aesthetic across the region. The hidden elements lie firmly within a continuum of building techniques that reached back into the Roman and Sassanian past. In contrast, it was in the external appearance, resulting from the blending of styles and materials, that the major changes occur. The diverse range of craftsmen exhibited internal conservatism and external innovation in order to create structurally sound as well as aesthetically innovative buildings across the region.

²⁷² Although the Byzantines had used it extensively, the Islamic architecture of Anatolia made limited use of the *opus mixtum* technique, apart from the frontier city of Akşehir.

Methods and materials: conclusion

The preceding survey has examined the often widely dispersed primary materials, and the numerous methods required to manipulate them, first into useable components, and then to build the structures. The construction process is likely to have been one of the more important aspects of the economy especially, but not only, in the urban centres. The construction business involved people from the widest cross-section of society, from the patronage of the sultan and *amīrs*, through the site managers and craftsmen, to the illiterate and unskilled labourers. By establishing a number of the different types of skilled and unskilled roles involved in the construction process in its widest sense, a slightly clearer picture of some of the members of the undocumented majority of Rūm Saljūq society can begin to emerge from obscurity.

A number of the numerous roles involved in the construction process remained basically unchanged from Antiquity to the modern era, and many of them were also not region-specific. However, a close examination of the constituent materials reveals the dynamic nature of some of the newly developed processes. Over the course of the last few decades of the 6th/12th century, and into the early decades of the 7th/13th century, the stonemasons who were designing and executing the geometric patterns can be seen to have reduced their workload and increased the complexity of the patterns. There was a switch from relief patterns to intaglio, which involved the removal of less material, and thus less work.²⁷³ In addition, there was a rapid elimination of any visible grid-lines from the finished surface by the early 7th/13th century. In the last part of the 6th/12th century, architects and craftsmen imported glazed architectural tiles, such as those at the Kılıç Arslān II kiosk in Konya, or employed mass-produced monochrome household wares, as on the exterior of tombs in Kemah and Divriği.

By the early decades of the 7th/13th century, polychrome glazed tiles were being produced across Anatolia, rather than being imported. They were also being employed across a greater array of structural typologies.

²⁷³ By only cutting away the stone where the pattern was desired, to create an intaglio pattern, rather than all the surface around it, to create a relief pattern, a greater degree of complexity, for less time and effort, became possible.

CHAPTER IV

*The ‘Izz al-Dīn Kay Kāwūs I hospital, Sivas:
A Case Study*

CONTENTS

CHAPTER IV – THE ‘IZZ AL-DĪN KAY KĀWŪS I HOSPITAL, SIVAS: A CASE STUDY

INTRODUCTION.....	275
Urban context of the hospital complex.....	278
Publication of the building.....	279
Axial focus of the complex.....	282
Functionality of the complex.....	287
PORTAL.....	288
Epigraphy.....	291
Niches.....	293
Geometric frames.....	296
Muqarnas hood.....	297
Zoomorphic sculpture.....	299
Façade muqarnas brackets.....	304
Entrance iwan.....	306
NORTH IWAN.....	308
Muqarnas niche.....	312
Mortar incisions.....	317
Techniques.....	326
Glazed tile lozenge patterns.....	328
COURTYARD.....	332
<i>Riwāqs</i>	333
Star vaults.....	335
Epigraphy.....	337
East iwan framing patterns.....	341
Courtyard muqarnas niches in stone.....	343
Timber.....	346
TOMB.....	347
Formal sources.....	350
Façade.....	354
Epigraphy.....	356
Tympanum.....	363
<i>Mihrāb</i>	365
Drum.....	369
Crypt.....	372
Formal relationship to hospital.....	375
Subsequent related structures.....	376
CONCLUSION.....	379

INTRODUCTION

While ‘Izz al-Dīn Kay Kāwūs I continued the expansionist policy of his father, Ghiyāth al-Dīn Kay Khusraw I, he also reformulated the idea of kingship, being the first Rūm Saljūq ruler to present himself as an imperial ruler in the Perso-Islamic mould.¹ This new role of the sultan, moving away from the previous Turkic idea of collective sovereignty, which Kılıç Arslān II (r.551-588/1156-1192)² had adhered to, was propagated to internal and external audiences through architectural constructions.³ In Sivas ‘Izz al-Dīn Kay Kāwūs I created a hospital that is considered to be the finest example of monumental architecture built by the Rūm Saljūqs.⁴ It stood like a colossus above all that came before it in Anatolia in terms of scale, decoration and materials. The capture of Sinop and Antalya had developed the north–south trade route between the Black and Mediterranean Seas, and increased the commercial importance of Sivas as the crossing point with the east–west trade routes. By choosing Sivas as the location for the hospital and tomb, ‘Izz al-Dīn thrust a symbol of imperial power and munificence, as well as a physical and permanent sultanic presence, into a major trading centre at the geographic heart of the sultanate.

The reign of ‘Izz al-Dīn Kay Kāwūs I (608/1211– c.616/1220)⁵ saw the real development of Islamic architecture in Anatolia,⁶ and the hospital which he had founded in Sivas by 614/1217-18 makes an excellent case study as it represents the culmination of the early syncretic phase. Crane has argued that Iranian culture and institutions had the most profound impact on the Rūm Saljūq sultanate,⁷ and the detailed analysis of this enigmatic structure and its diverse sources confirms this impact in a concrete and tangible form. The rectangular complex measures 61 meters by 41.5 meters⁸ and consists of four iwans around a courtyard, with an arcade (*riwāq*) along the north and south side. The entrance portal is located to the east and

¹ Mecit (2011), pp.69-70 argues that this change was a result of the increasing number of Persian administrators and craftsmen entering the sultanate.

² Bosworth (1996), p.213.

³ Mecit (2011), pp.69-70.

⁴ Ertug (1991), p.172.

⁵ Bosworth (1996), p.213.

⁶ Cahen (1978), p.813.

⁷ Crane (1994), p.264.

⁸ Kuran (1969), p.104.

the tomb of ‘Izz al-Dīn is located in the south iwan. The exterior and lower interior parts are in stone, with much of the structure above the springing of the arches, along with the tomb, being in brick. The complex has a number of unique decorative and architectonic elements which are examined in detail below.

The main purpose of this case study is to analyse the details of the decoration, much of which, particularly in the north iwan, is studied here for the first time. Another issue that will be addressed is the chronology of the planning of the tomb. The established view, as espoused by Redford,⁹ is that the tomb was added after the death of ‘Izz al-Dīn Kay Kāwūs I. It is argued below that it was part of the original design schema of the complex.

Sivas, ancient Sebastia, is located in the northern central region of the Anatolian plateau (fig. 1.1). The region experiences very harsh winters which limits the number of months of the year during which construction is possible.

Michael the Syrian reported that in 1021 CE the Byzantine emperor Basil II gave Sivas to the Armenians as compensation for his confiscation of the lands of the Armenian king Senek’erim.¹⁰ The city subsequently fell to the Türkmen armies in 1059 CE.¹¹ The date of the beginning of the rule of the Armeneo-Muslim dynasty of the Dānishmendids is unclear, but the city had its second Dānishmendid ruler by 497/1104.¹² Following the death of Malik Muḥammad in 536/1142 the Dānishmendid lands were split, with Sivas going to Yağıbasan,¹³ after which the city was reportedly destroyed, in c.537/1143.¹⁴ The city changed hands several times and in 568/1173 the Syrian ruler Nūr al-Dīn sent an army which captured Sivas.¹⁵ The last Dānishmendid ruler, Dhū’l-Nūn, succeeded to the lordship of the city in mid-

⁹ Redford (1991), p.71.

¹⁰ Dadoyan (2013), p.13.

¹¹ *Ibid.*, (2013), p.21.

¹² Bosworth (1996), p.215. Dadoyan (2013), pp.50-51 cites Matthew of Edessa, who wrote that Dānishmend (d.497/1104) was Armenian. The Dānishmendid *amīrs* were said to descend from a prominent Armenian family from Georgia. See chapter one, pp.11-12.

¹³ *Ibid.*, pp.215-6. The Byzantine chronicler Niketas Choniates stated that Sivas was given to Dhū’l-Nūn by his father-in-law, the Rūm Saljūq sultan Mas‘ūd I, and it was a great and prosperous city. What is clear is that at some point Yağıbasan took control of the city. See the translation in Magoulias (1984), p.66.

¹⁴ Vryonis (1971), p.159.

¹⁵ Mecit (2014), p.71.

568/early 1173 following the assassination of his nephew Ismāʿīl.¹⁶ In 570/1175 the city fell to the Rūm Saljūq sultan Kılıç Arslān II¹⁷ and was sacked.¹⁸

Given the Armenian and Georgian origins of the Dānishmendid dynasty¹⁹ and the large Armenian population over which it ruled, it is not surprising that the buildings constructed in the lands under its control were thoroughly Armenian in character. Although lacking the figural decoration and mouldings common to the churches of the region and further to the east, the surviving structures tend to be built of dressed basalt ashlar with a rubble core, and feature barrel vaults and arches. In contrast, the other Muslim dynasties of Anatolia all made use of brick, to a greater or lesser extent, and their buildings tended to feature the pointed arch developed in the architecture of Iran. The surviving Dānishmendid structures, located mainly in Kayseri and Niksar, and possibly including the Great Mosque in Sivas, are generally unornamented, lacking the rectilinear geometric patterns seen in the later Rūm Saljūq, Mengüjekid and Saltuqid structures.²⁰ The dynasty had always had close ties with the Rūm Saljūqs²¹ but by the beginning of the chronological scope of this study the Dānishmendids had effectively lost all power and their lands had been subsumed into those of Kılıç Arslān II.

Sivas became the commercial capital of the Rūm Saljūq sultanate²² and one of the Saljūq capitals,²³ placed as it was on the main trans-Anatolian trunk route from

¹⁶ Beihammer (2011), p.639. Dhūʿl-Nūn subsequently found shelter at the Byzantine court of Manuel in Constantinople.

¹⁷ Bosworth (1996), pp.215-6. Niketas Choniātēs states that while in Constantinople, Kılıç Arslān II promised to hand Sivas over to the emperor following the presentation of riches to him on his visit; it was after returning to Konya that he laid siege to Sivas and conquered its subject lands. See Magoulias (1984), p.69.

¹⁸ Vryonis (1971), p.159.

¹⁹ Dadoyan (2013), pp.50-51.

²⁰ In contrast to the generally austere lithic exterior, Arik, O. (2008), p.39 cites the recently discovered glazed tile section on the interior of the Yağıbasan madrasa in Niksar.

²¹ Choniātēs states that two Dānishmendid rulers, Yağıbasan and Dhūʿl-Nūn, were awarded their lands at the division of the Rūm Saljūq sultanate by Masʿūd, because they had both married daughters of the sultan (Magoulias (1984), p.66).

²² Rogers (1976), p.85.

²³ Faroqhi (1997), p.689. It was one of their major strongholds according to Hill and Grabar (1964), p.66.

Konya in the west, with its connections to trade with Constantinople,²⁴ and to Tabrīz, Central Asia and the Persian Gulf in the east.²⁵ The Rūm Saljūqs lost the port of Trebizond to the newly established Pontic Comnenid state in around 1204 CE. This ended their access to Black Sea shipping and caused a commercial crisis in Sivas.²⁶ The city's significance was enhanced after the capture in 611/November 1214 of the Black Sea port of Sinop²⁷ as it became the intersection point of the lucrative north–south trade route connecting the Black Sea with the Mediterranean through Antalya to the east–west route. The north–south trade was further enhanced following the reconquest of Antalya in Ramaḍān 612/January 1216,²⁸ making Sivas the centre of the Anatolian caravan trade.²⁹ It may well be as a result of these two victories that the hospital was commissioned by ‘Izz al-Dīn. Savvides estimates that the city had a population of around 200,000 in the 7th/13th century, with a Muslim majority³⁰ and an important slave market.³¹ In addition to the transit goods, Greek weavers in the city were famous for producing a wide range of textiles.³² By the time Ibn Baṭṭūṭa visited Sivas in the 8th/14th century, he described it as the biggest city in the country.³³

Urban Context of the hospital complex

The lack of any surviving buildings in the immediate vicinity which predate the hospital makes a clear understanding of the original context of the structure almost impossible. The broader urban layout is based on that of the Byzantine city and prior to the programme of rebuilding the city walls which was initiated by sultan ‘Alā’ al-

²⁴ Vryonis (1971), p.220. By the last half of the 6th/12th century, despite the sometimes troubled relationship between the Greeks and Muslims, merchants travelled freely between Konya and Constantinople.

²⁵ Peacock (2013)b, p.208 states that the city was of considerable strategic importance.

²⁶ Peacock (2006), p.137.

²⁷ Cahen (2001), p.51.

²⁸ Redford and Leiser (2008), p.95. The city was the main port for trade with Egypt and the eastern Mediterranean. Although it remained independent from 608/1212 - 612/1216 Antalya relied on trade passing through Saljūq lands and was integrated into the Saljūq economy, *ibid.*, pp.89-91.

²⁹ Faroqi (1997), p.689. As an Ottomanist, caution may be required in regard to her knowledge of the earlier period.

³⁰ Savvides (1981), pp.115-116. This rather implausible number does, if nothing else, indicate that the city was of considerable size.

³¹ Vryonis (1971), p.240.

³² *Ibid.*, p.477. The Christian populations of Konya and Kayseri were also known for their woven goods.

³³ Gibb (1983), p.131.

Dīn Kay Qubādh I (616/1220–634/1237)³⁴ the city was surrounded by a wall with six gates.³⁵ The hospital is situated in the centre of the city and is the earliest of the three surviving 7th/13th century buildings clustered together³⁶ (fig. 4.1). Nothing remains of the structures that were on the citadel, located a few hundred meters to the south of the hospital. The earliest surviving building in Sivas is the nearby Great mosque, dated to the 6th/12th century,³⁷ and located about 200 meters to the south-east of the hospital (fig. 4.4). Attached to the east end of the *qibla* wall of the mosque is a brick minaret that appears to date from 609/1212-13³⁸ and features glazed and baked brick decoration in a manner not dissimilar to elements of the interior and tomb in the hospital complex. There was a Dānīshmendid Dervish lodge, the Yağlıbasan lodge, attached to the Great mosque but it does not survive.³⁹

Publication of the building

As one of the major surviving monuments of the Rūm Saljūqs, particularly from the period before ‘Alā’ al-Dīn, the tomb and hospital at Sivas has received the serious attention of restorers and scholars since the first decade of the 20th century. The dedicatory epigraphy was first published in 1917 by van Berchem and Edhem,⁴⁰ and more recently the minor inscriptions of the interior have been partially and in some cases questionably translated by Bayat.⁴¹ In 1934 Gabriel’s *Monuments turcs d’Anatolie* gave a ground plan and overview of the structure. Following the excavations and removal of late-Ottoman accretions in 1938, the only real

³⁴ Bosworth (1996), p.213.

³⁵ Wolper (1995), pp.41-42.

³⁶ The others are the Buruciye madrasa to the north east and the façade of the Çifte Minareli madrasa, located immediately opposite the hospital portal, both dated to 670/1271-2. South of the Çifte Minareli madrasa are the recently (2013) excavated remains of what might be the palace built by ‘Alā’ al-Dīn in the 1220’s CE. See Wolper (1995), p.43 for the claim that there was a palace on the site of the Çifte Minareli madrasa.

³⁷ Meinecke (1976), Vol 2, p.427. The date of construction of the stone mosque was either 1109-10 or 1196 based on epigraphy, with preference given to the earlier date by Meinecke.

³⁸ *Ibid.*, p.467 derives the date from an inscription in the Sivas Arkeoloji Müzesi. In Vol. 1, pp.20-21 Meinecke notes similarities between the decoration of the minaret and the work of Aḥmad ibn Abī Bakr al-Marandī, the craftsman whose name is featured on the window of the tomb in the south iwan. For more details see chapter two, pp.126-145.

³⁹ Wolper (1995), p.41. Judging by its name, the lodge must have been built between 537/1142 and 559/1164.

⁴⁰ Cited in Redford and Leiser (2008), p.113.

⁴¹ See Bayat (2006), p.363 for a particularly poor mistranslation of an epigraphic panel.

monograph on the complex was published by Çetintaş in 1953.⁴² This was followed by a brief discussion of the craftsman's signature on the tomb by Mayer in 1956. In 1976, in his magisterial *Fayencedekorationen seldschukischer Sakralbauten in Kleinasien*, Meinecke addressed the characteristics of the tile work of the tomb.⁴³ Önkal discusses the tomb and gives a number of the inscriptions along with a plan and elevation.⁴⁴ Several versions of the ground plan have been published, all with varying degrees of accuracy⁴⁵ and more recently individual elements of the structure have been touched upon in journal articles.⁴⁶ Despite this scholarly attention, there has not yet been a comprehensive assessment of the formal and stylistic sources and decorative characteristics of the complex, or its historical context and role in the development of Rûm Saljûq architecture.

Throughout the course of the 20th century a number of elements of the structure have been rebuilt. The entire north section is new, as is the north half of the west façade (fig. 4.2) and the stone vault of the east iwan (fig. 4.40). Between 2010 and 2013 the complex was renovated again with much restoration but also, unfortunately, the loss of much of the original detail, particularly to the mortar patterns in the north iwan.⁴⁷ At the same time, a number of damaged stones were replaced with stones featuring non-original patterns.

The following ground plans are an attempt to create the most accurate plans possible, by reconciling the various errors in previously published plans and integrating them with measurements taken on-site.

⁴² In 1990 a small volume by Biget was published but it does not add a great deal to the understanding of the complex.

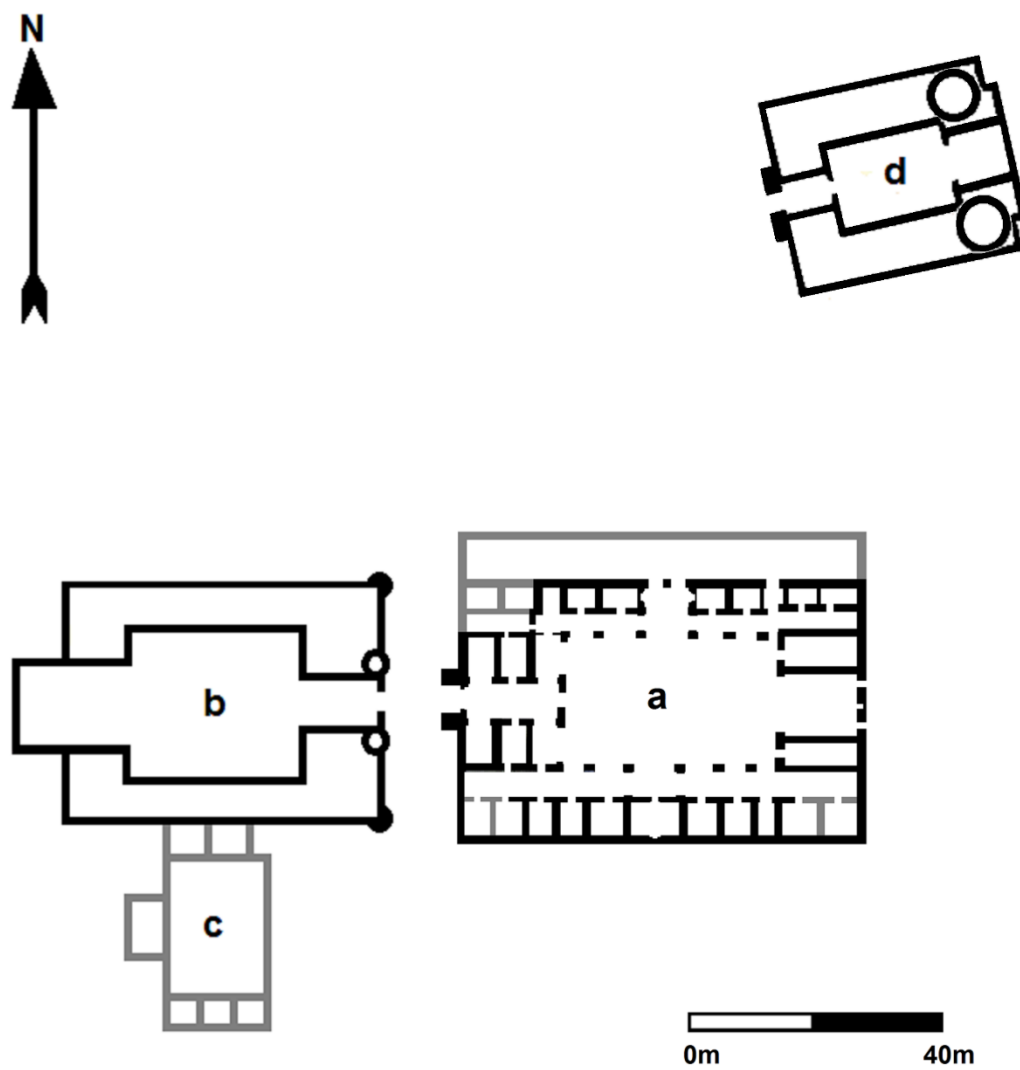
⁴³ See Meinecke (1976), Vol. 1, pp.20-21 and Vol. 2, pp.430-438.

⁴⁴ Önkal (1996), pp.383-390.

⁴⁵ See Gabriel (1934), p.147, fig.92, Kuran (1969), p.103, Aslanapa (1971), p.31, pl.26 and Bayat (2006), p.354.

⁴⁶ See Bakir and Basagaoğlu (2006) and Yavuz (1993).

⁴⁷ Photographs taken by the author during the restoration in 2010 demonstrate the degree of loss when compared with photographs taken in 2013.



a	'Izz al-Dīn hospital
b	Çifte Minareli madrasa
c	'Alā' al-Dīn palace (?)
d	Buruciye madrasa

Fig. 4.1 – The 7th/13th century urban context of the 'Izz al-Dīn hospital © R. McClary

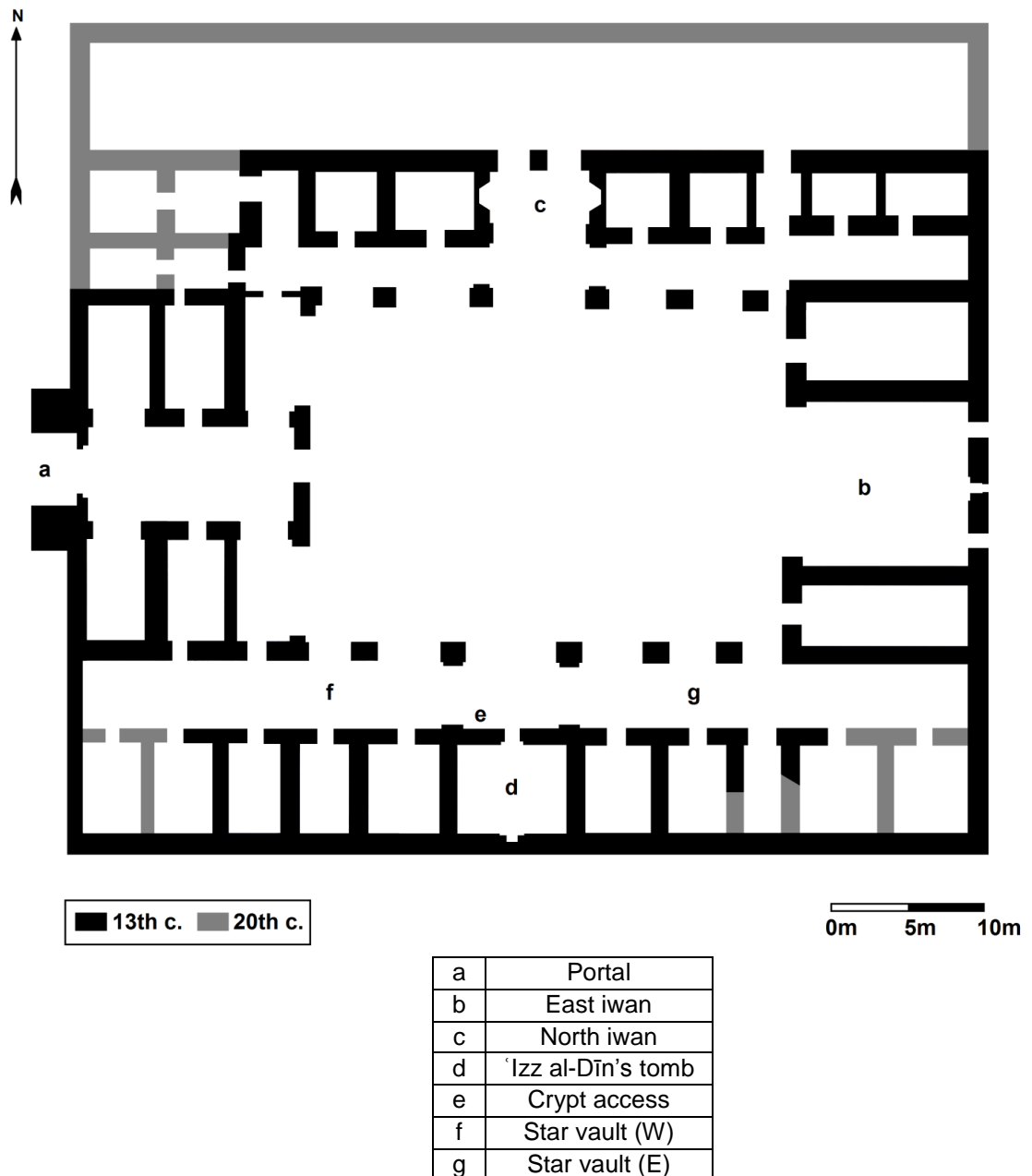


Fig. 4.2 – 'Izz al-Dīn hospital, Sivas; ground plan⁴⁸ © R. McClary

Axial focus of the complex

There are a number of precedents for the overall plan of the complex, both in Rūm Saljūq territory and further afield. The western half of the Çifte madrasa in Kayseri (602/1206) is the closest antecedent, chronologically and stylistically, to the plan of the Sivas hospital (fig. 4.3). In addition, the eastern half of the Kayseri structure has a

⁴⁸ Ground plan based on direct measurements, and elements of Aslanapa (1971), p.31 plan 26, and Bayat (2006), p.354.

portal at 90 degrees to a tomb that is incorporated into the long side of the courtyard. The earlier portal is not very monumental and the entrance is in the south not the east so, unlike Sivas, the complex and tomb are not in any way *qibla*-oriented.⁴⁹ The Kayseri plan is superficially similar although neither madrasa is entered on the central axis. In addition, the tomb is to the left of the iwan rather than in it. The significant similarity is in the way that the largest iwan is opposite the wall with the entrance, with the two iwans on the other sides of the courtyard being smaller. Consequently, it appears that the overall concept is similar enough that aspects of both halves of the Kayseri structure appear to have been of significant inspiration for whoever it was that laid out the 'Izz al-Dīn hospital, but it is not a direct copy of the Kayseri madrasa.

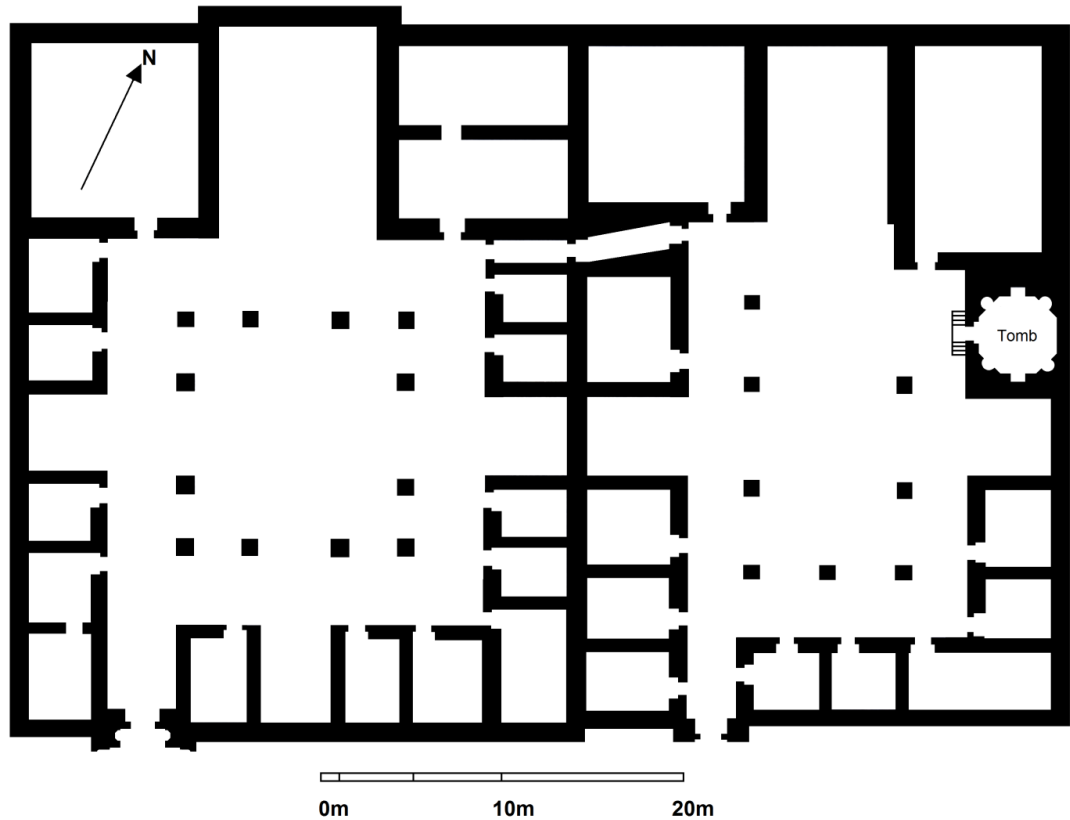


Fig. 4.3 – Çifte madrasa, Kayseri; ground plan⁵⁰ © R. McClary

There are earlier hospitals on a four-iwan plan, such as the *bīmāristān* of Nūr al-Dīn in Damascus (549/1154),⁵¹ but the similarities are superficial and there are far more

⁴⁹ See chapter two, pp.45-46.

⁵⁰ The plan is based on a combination of measurements made on site in 2013 and Gabriel (1934), p.61, fig.36.

differences, particularly in regard to the greater size and number of rooms at Sivas. The Damascus structure has no *riwāq* or axial shift from outside to inside. The structural aspects of much of the Sivas hospital are not function-specific and similar buildings with a different function, such as madrasas and caravanserais, could just as easily have been used as sources by the designers of the hospital. The four-iwan concept is pre-Islamic in origin, having been developed in Iran in Parthian times.⁵² Its use continued in Sassanian palace architecture⁵³ and it also occurred in Buddhist *vihāras* (monasteries) of Central Asia. The form entered the Islamic canon through the construction of madrasas and palaces in Eastern Iran.⁵⁴ As well as numerous Ghūrid epigraphic elements which are discussed below, the overall plan of four cardinally aligned iwans can also be found in the Ghūrid era plan of the Friday mosque in Herāt (6th/12th century).⁵⁵ Elements of the plan of the hospital follow pre-established traditions but, as is shown below, there are also a number of innovative and unique elements to the nature and decoration of the complex.

It is upon entering the courtyard that the axial shift between the exterior and the interior of the structure becomes manifest. Because the entry way is on an east-west axis with the largest iwan ahead and a *riwāq* on each side of the courtyard running towards it, the initial impression established by the monumental portal in the middle of the west façade is that the complex is based upon a west to east axis. It is only upon entering the interior space fully that the initial west to east axiality dissolves. What becomes clear is the inherently north to south interior axial focus, through the north iwan towards the *miḥrāb* at the back of the tomb. This is due to a number of

⁵¹ Ettinghausen and Grabar (1987), p.309 give the date, and have a ground plan of the *bīmāristān* in Damascus.

⁵² Hutt (1974), p.125 cites the palace of Assur of the 1st century AD.

⁵³ See Erdmann (1969), pp. 25-51 and p.146, figs. c and d.

⁵⁴ Hillenbrand (1994), pp.174-5. From the 11th century CE onward they became ubiquitous but the ravages of nature, and the Mongols, have left few survivors. Blair (1985), p.81 notes that only three pre-Mongol madrasas exist in Greater Iran and those are fragmentary. Hillenbrand (2000), p.147 states that the South (great) palace at Lashkar-i Bāzār, attributed to Maḥmūd of Ghazna (388-421/998–1031), was one of the earliest four-iwan plans in Islamic architecture. See *ibid.*, p.148, fig.17.

⁵⁵ Hillenbrand (2000), p.134 and p.135, fig. 10. On p.202 he states that Ghūrid monuments with a religious function often face due west in defiance of a correct *qibla* (with south being the equivalent in Anatolia). Other examples include Shāh-i Mashhad and the two Chisht mausolea. The Herāt mosque also has the tomb on the long side of the courtyard, but behind, rather than in, the iwan. There is also an axial shift from the outside to the inside of the structure. A similar orientation is also seen at the Friday Mosque in Isfahān

factors, including the increasingly wide and attenuated *riwāq* arches towards the centre (fig. 4.41), the decorative scheme of the north iwan and, primarily, the dazzling array of colours and patterns on the tomb entrance and tympanum of the arch above.

Beginning with the earliest surviving structure in Sivas, the Great mosque, the *qibla*-orientation of structures with *miḥrābs* becomes increasingly accurate over the course of the late 6th/12th to late 7th/13th century. The Great Mosque (c.593/1196-97) has a south-south-west orientation, facing 190 degrees. The ‘Izz al-Dīn hospital is at the mid-point in this lineal process, facing due south at 180 degrees. In contrast the later Gök madrasa (670/1271-2)⁵⁶ has a much more accurate south-south-east *qibla* orientation, facing 166 degrees. Although Redford refers to the fact that the hospital has a cardinal rather than *qibla* orientation,⁵⁷ it seems clear, in the context of the earlier and later structures in Sivas with a *miḥrāb*, that from the initial planning stages of the complex onwards, it was the intention of the builders to orientate the building towards Mecca.

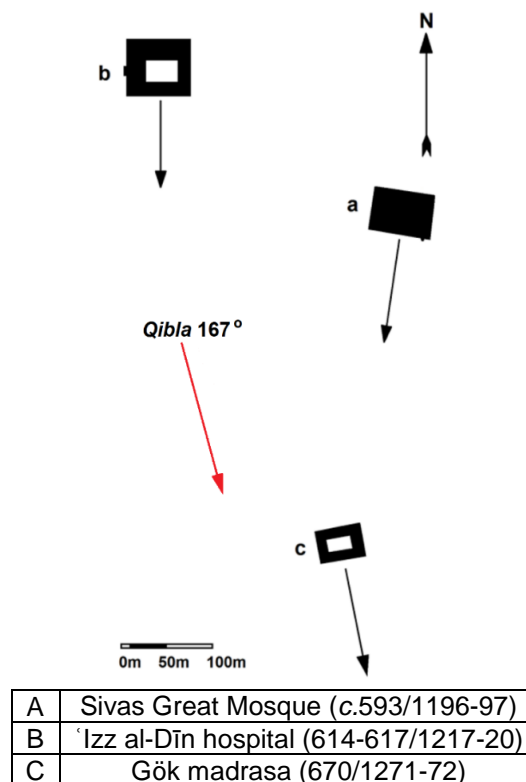


Fig. 4.4 – Orientation and relative position of surviving 6th/12th -7th/13th century structures

⁵⁶ The room to the right of the portal in the west façade functioned as a mosque.

⁵⁷ Redford (1991), p.71.

Although the ground plan of the structure appears to be regularly planned there are a number of errors, or at least unexplained variations, that occurred at the earliest stage of construction when the site was being laid out and the foundations set. These variations are not all immediately apparent but by overlaying cardinal and other grid lines on the plan they become clear (fig. 4.5). The biggest difference is that the north and south iwans are misaligned, but the east and west are also out of true. In addition, the south wall of the room to the west of the north iwan continues straight, but the one to the east recedes slightly after the *riwāq* arch.⁵⁸

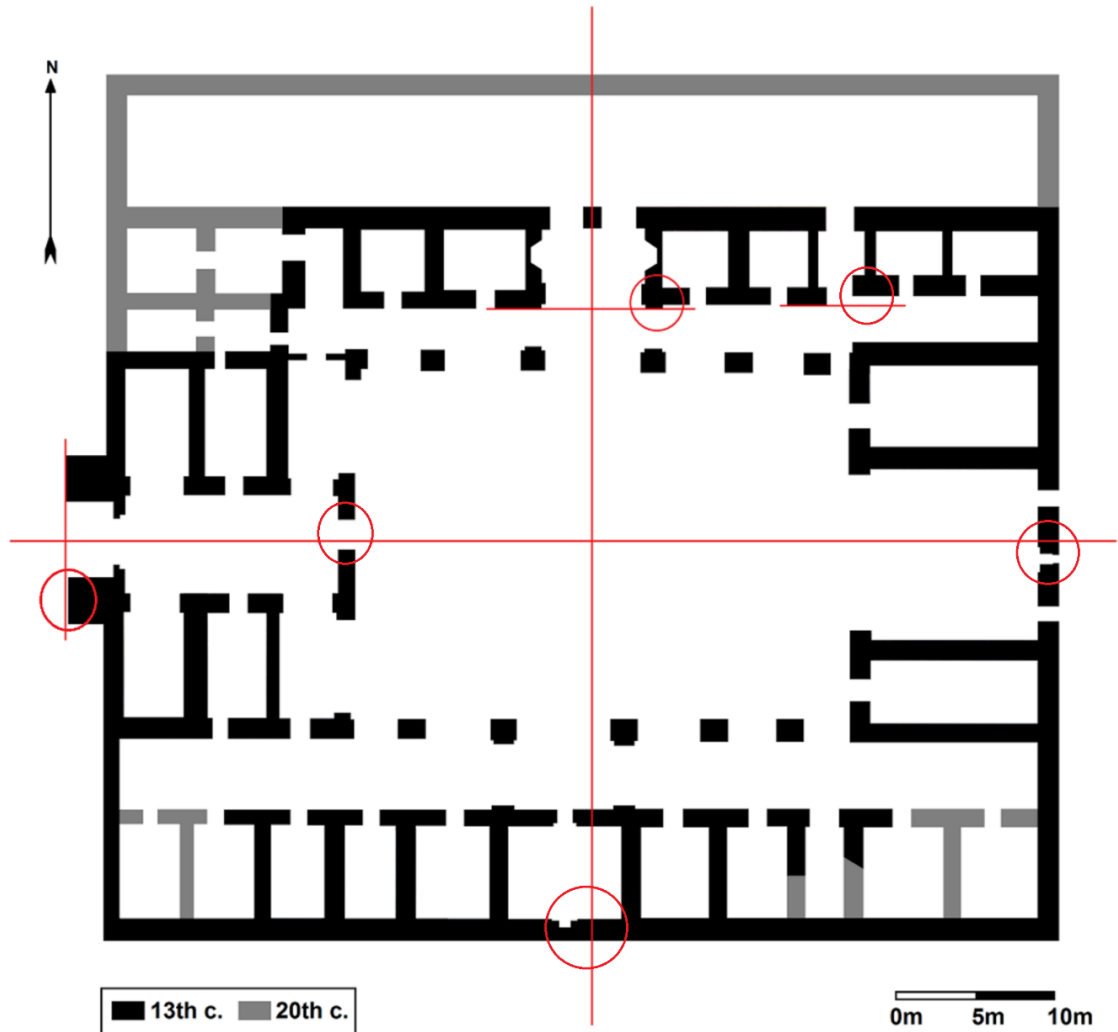


Fig. 4.5 – Errors and variation in the plan of the Sivas hospital © R.McClary

⁵⁸ The wall is set back 25cm and follows the same plan as the supporting column of the other side of the arch. The column on the other side of the north iwan is the same, suggesting that the wall to the west represents an error at the point of the laying of the foundations.

Functionality of the complex

The survival of the *waqf* document⁵⁹ sheds some light on the functional role of some of the spaces within the hospital complex. A comparison of the document and the fabric of the structure has resulted in the suggestion that the rooms accessed from inside the entrance iwan (fig. 4.5) were for polyclinical services for outpatients, while another was a pharmacy. The rooms along the north and south sides of the courtyard were possibly rooms for patients, the large east iwan a classroom and the rooms on either side for surgical procedures. In addition, Bakir and Basagaoğlu have also suggested that the rooms on either side of the entrance iwan were for medicine preparation and for doctors.⁶⁰ It is unclear, judging by the evidence, just how certain the attribution of functional roles to the individual spaces is, but the suggestions are certainly plausible. The choice of Sivas as the site by ‘Izz al-Dīn, and the construction of a hospital, for his most significant surviving example of architectural patronage, indicates the importance that he attributed to the city. Across the Islamic world hospitals were part of a wider public health programme promoted by the ruling elite, as well as important centres of learning.⁶¹

⁵⁹ See Cevdet (1938), pp.35-38 for the text in Arabic and Turkish. Dr. Wolper has raised concerns as to the authenticity of the document (personal communication 03/09/2014). As the *waqf* is likely to postdate the construction of the building either way, the structure remains the primary contemporary source.

⁶⁰ Bakir and Basagaoğlu (2006), p.69.

⁶¹ See Pormann and Savage-Smith (2007), pp.96-101 for an overview of the layout, functions and funding of Islamic hospitals in the medieval period. Unlike their Christian counterparts, Islamic hospitals practiced medicine that was secular in character, based on the principles of humoral pathology rather than religion (*ibid.*, p.101).

PORTAL

Projecting from an otherwise austere exterior, the decorative focus of the exterior of the structure is on the large and highly decorated portal. It is the largest one to survive from the period up to the death of 'Izz al-Dīn, being over 10m wide and c. 13m high.⁶² In contrast, the next largest portal is the one at the Evdir Han (c. 610/1213 - 617/1220)⁶³ near Antalya which is less than 9m wide. Given the precise nature of the patterns and muqarnas discussed below, it is perhaps surprising that the projection from the façade differs slightly from one side to the other, with the left projecting 8.3cm further than the right.⁶⁴ The significance of this portal for understanding the development of Islamic architecture in Anatolia is due to the fact, noted by Rogers, that it is evidence for the full repertoire of Anatolian Saljūq portal decoration having come into use by the early 7th /13th century.⁶⁵

It is faced with smooth-cut ashlar of limestone and features primarily geometric patterns, along with some curvilinear vegetal designs above the niches, around the arch and on the engaged octagonal columns. There are two zoomorphic sculptures, of lions, in the spandrels of the muqarnas hood. The doorway has a barrel-arched form and consists of stepped voussoirs, with the keystone being narrower than the rest, and there are large geometric relief roundels in the spandrels (fig. 4.7). The pattern of the roundels is copied in a similar location on the later Çifte Minareli madrasa opposite the portal.⁶⁶ Apart from the high-relief zoomorphic sculptures and the roundels, all the patterns on the hospital portal are intaglio. Two simpler versions of the geometric roundels are located on either side of the upper section of the muqarnas hood in a similar manner to those on the earlier western portal at the Çifte madrasa in Kayseri.⁶⁷

⁶² At the base of the portal the left-hand side is 304.2cm wide, the doorway 462cm and the right-hand side 304.4cm, for a total width of 1070.6cm. It is constructed of 28.5 courses of ashlar blocks with a fairly consistent height of c.46cm. All measurements were made by the author on site between 2010 and 2014 unless otherwise stated.

⁶³ Erdmann and Erdmann (1976), p.61 give the date range based on the partial inscription of 61? AH and the attribution to 'Izz al-Dīn.

⁶⁴ 263.5cm projection on the left compared with a 255.2cm projection on the right.

⁶⁵ Rogers (1975), p.15.

⁶⁶ It is not clear why the pattern was copied so closely over 50 years later. Rogers notes the similarity but incorrectly states that the hospital roundels are in marble (*ibid.*, p.15).

⁶⁷ See chapter two, pp.45-46.

The corners of the entrance, as at many Rūm Saljūq portals,⁶⁸ have engaged columns but in this case they have an octagonal form and capitals with chamfered muqarnas cell corners (fig. 4.10) that are almost identical to the ones at the earlier citadel mosque in Divriği.⁶⁹ Unlike earlier portals there is extensive use of vegetal split palmette decoration as well as the more common rectilinear geometric patterns. The plastic combination of the curvilinear and rectilinear patterns was previously the preserve of wooden *minbars*, such as the one in the citadel mosque in Konya of 551/1155.⁷⁰

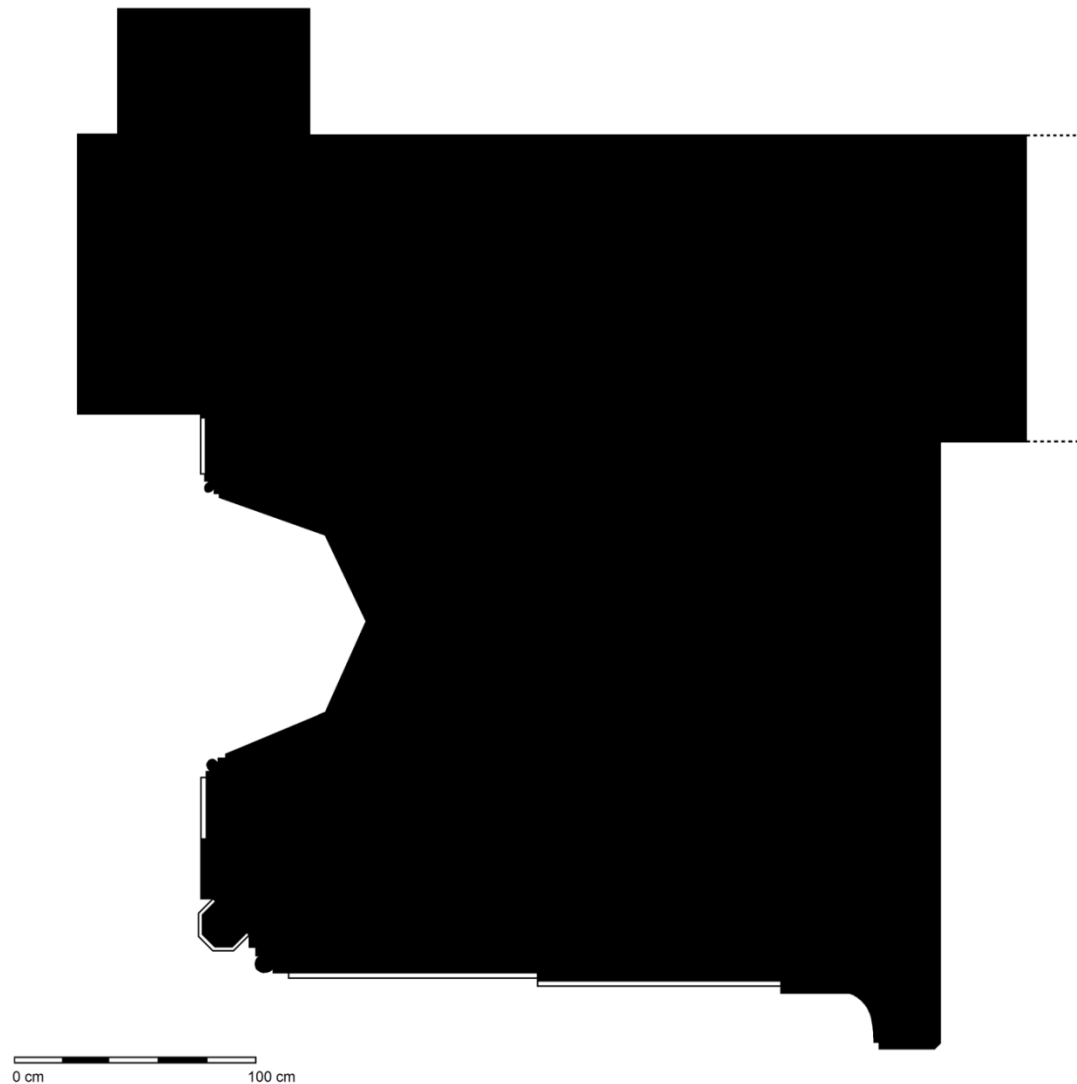


Fig. 4.6 – Portal south cross-section at c. 190cm above grade © R. McClary

⁶⁸ See chapter two, pp.37-94.

⁶⁹ See chapter two, p.40, fig.2.1.

⁷⁰ See chapter three, pp.243-244.



Fig. 4.7 – Doorway right-hand spandrel geometric relief roundel © R. McClary



Fig. 4.8 – 'Izz al-Dīn hospital, Sivas (614/1217-18); portal © R. McClary

Epigraphy

A single band of Arabic epigraphy runs above the doorway and over the two niches. The side sections project out slightly, whilst the section over the door is flush with the arch voussoirs below. It features a rather unusual form of epigraphy that has been described by Sauvaget and Wiet as *naskhi Ayyoubide*,⁷¹ but Redford and Leiser see no reason to categorise it as either and note that it is of a different nature than other inscriptions dating from the reign of ‘Izz al-Dīn.⁷² The epigraphy reads:

- (A) أمر بعمارة هذه الدار الصّحة السلطان ظلّ الله ال
(B) غالب بأمر الله عزّ الدنيا والدين ركن الإسلام والمسلمين سلطان البرّ والبحر تاج آل سلجق أبو
(C) الفتح كيكأوس بن كيخسرو برهان أمير المؤمنين في تأريخ سنة أربعة عشر (و) ستمائة

*The construction of this house of health has been ordered by the sultan, shadow of God, the victorious one by order of God, ‘Izz al-Dunyā wa’l-Dīn, the pillar of Islam and Muslims, the Sulṭān of the land and the sea, the crown of the Saljūq family, Abū’l-Faṭḥ Kay Kāwūs, son of Kay Khusraw, proof for the Commander of the Believers in the year 614 [1217-18].*⁷³



(A)



(B)



(C)

Fig. 4.9 – ‘Izz al-Dīn Kay Kāwūs I hospital; portal foundation epigraphy © R. McClary

⁷¹ Sauvaget and Wiet (1939), p.147.

⁷² Redford and Leiser (2008), p.115. *Ibid.*, p.114 cites Duran, R. *Selçuklu Devri konya yapı kitaleri* (2001), p.13 where the author, in reference to Konya, refuses to typify the Saljūq inscriptions into any of the standard calligraphic groups because of the stylistic complexity of Saljūq epigraphy.

⁷³ New translation incorporating elements of the transcription and translations in Bayat (2006), pp.355-356 and Sauvaget and Wiet (1939), p.147 with corrections; they give the Arabic text, to which minor corrections have been made.

Although Rogers suggests the date is likely to refer to the foundation rather than the completion,⁷⁴ construction may have started prior to 614/1217-18 if the stonework was to be in place in order for the tomb to be completed by 617/1220.⁷⁵



Fig. 4.10 – Left-hand octagonal engaged column capital © R. McClary

⁷⁴ Rogers (1976), p.72

⁷⁵ Rogers (1975), p.13 suggests that the Çifte Minareli madrasa at Erzurum, finished in 641/1243 and on a similar scale to the Sivas hospital, could have taken ten years to build owing to the short building season.

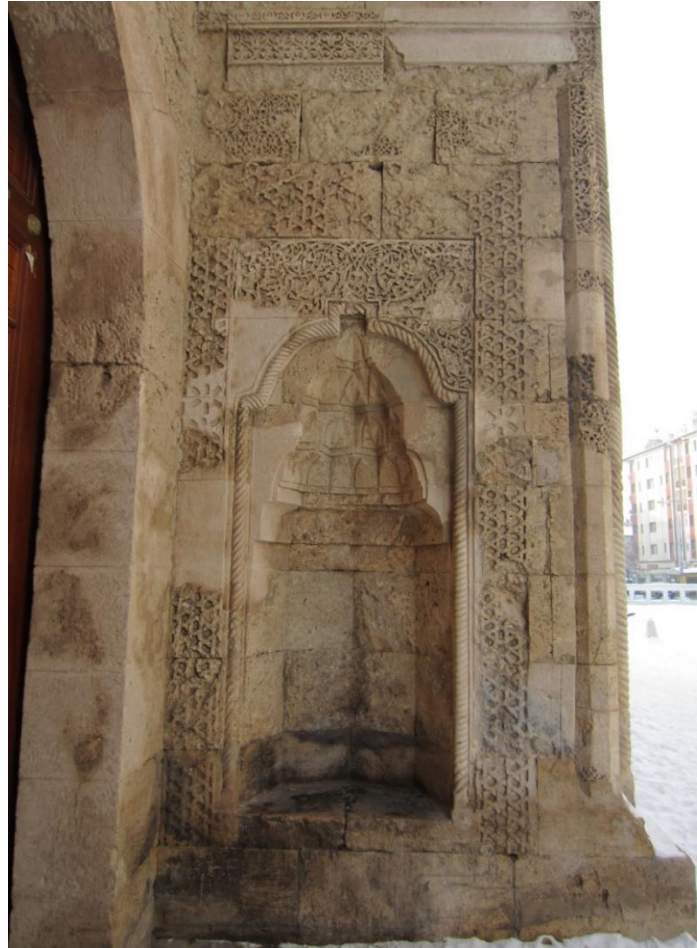


Fig. 4.11 – Portal right-hand niche © R. McClary

Niches

Unlike earlier portals with flanking niches, the plans of the Sivas flanking niches are not two halves of a regular polygon. They have four facets but the back facets are shorter than the front ones, thus creating half of an irregular octagon (figs. 4.6 and 4.11). Previous examples have half hexagons (Mama Khātūn), half octagons (Evdırhan) or half decagons (Eshab-i Kehf).⁷⁶ The portal niches also have a different plan to the three-sided brick-built niches in the north iwan of the hospital. The muqarnas hoods at the top of each of the niches consist of four rows of muqarnas cells over a plain cornice (fig. 4.11).

⁷⁶ For more details and plans of the other portals see chapter two, especially pp.93-94. The recess of the niche starts 61cm above the flagstones.

Rogers notes that the grooved cut used on the portal carving appears to emerge fully formed⁷⁷ but this is not surprising when the technique had been in use for many years in the region to the north-east, on Armenian and Georgian churches. The Bagrat cathedral in Kutaisi, dating from the early 11th century CE has a double V-incised surface on the curvilinear pattern on a column base in the portico.⁷⁸ The vegetal pattern carved into the spandrels of the two niches, with split leaves, circumvolutions and overlaps, is very similar to an altar screen in Ozaani in eastern Georgia which dates from the 10th or early 11th century CE (fig. 4.12). In both cases the surface of the intaglio decoration is incised with a single V-shaped groove,⁷⁹ and the compositions are surrounded by a rope motif. Although the Georgian example is in stucco, the close stylistic similarities between the two examples makes it quite possible that there were Georgian craftsmen involved in the design and construction of the portal in Sivas. Although there is a paucity of evidence concerning the ethnic demographic of construction workers in medieval Anatolia, there are other snippets of evidence that make it likely that there were Georgians present. A craftsman from Tbilisi is known (from a signature on the *minbar* in the mosque/hospital complex) to have been working in Divriği in the 1220's CE.⁸⁰ There were deep political and military ties between the Bagratid Georgians and the Rûm Saljûqs in the 7th /13th century.⁸¹ There are also a number of Georgian churches in the north-east of Anatolia.⁸²

⁷⁷ Rogers (1975), p.15.

⁷⁸ See Mepisashvili and Tsintsadze (1979), p.143.

⁷⁹ The use of the V-incised surface in stonework decoration can be seen in the decoration over the door and on the capitals of the Zeda Vardzia church in south-west Georgia, built in the 11th century CE. See Gaprindashvili (1975), figs.13 and 14. Another contemporary stone example can be seen at Deir Mar Benham, near Mosul. See Snelders (2010), p.491, pl.47.

⁸⁰ Kuban (2001), p.82. Pancaroğlu (2013), p.41 cites the signature of a craftsman on the stone-built Alay han near Kayseri that ends with *al-najjār* (the woodcarver) which raises a number of questions about the division of roles, promotion and the ability of craftsmen to work across materials and scale.

⁸¹ These included inter-marriage, partly in order to achieve greater legitimacy in the eyes of the local Christian population, as well as the awarding of *iqta'* to Georgian noblemen. See Peacock (2006), pp.127-143 for a good overview of the nature of the relations between the Georgians and Rûm Saljûqs in the early 7th/13th century.

⁸² See Edwards (1985), pp.15-37 for details of some of the surviving churches in the north-east of Anatolia. For a detailed study of the figural sculpture on Georgian churches of the region see Winfield (1968), pp.33-72.



A: South niche spandrel detail, Sivas



B: Stucco altar screen in Ozaani, Georgia (After Mepisashvili and Tsintsadze (1979), p.240)

Fig. 4.12 – Carving comparison between Sivas and Georgia

The shouldered arch form, delineated by the rope motif around the muqarnas hood of the niches, is repeated on a smaller scale in the blind panels in the first row of the muqarnas hood, between the cells.⁸³ Both niches have a shouldered arch rope motif around them. The rope motif is, in turn, surrounded by a hexagon-based strapwork border that runs down the side and has a wider band across the top. The use of the rope motif ties the niches in with the larger scale rope pattern around the pointed blind arch that surrounds the main muqarnas hood of the portal. It has been claimed that the twisted fibre rope used to stabilise the yurts of Central Asian Turks provided symbolic security when carved as a stone decorative motif on the Islamic architecture of Anatolia.⁸⁴ Appealing though such an argument may be, the motif can also be found on many earlier and coeval structures from a number of Christian architectural traditions. The cruciform domed church in Kvatakhevi, near Tbilisi, dating from the late 6th/12th to early 7th/13th centuries, has a rope motif around the

⁸³ The motif is a theme that runs throughout the structure. A similar shouldered-arch form is also seen on a larger scale in the two door openings in the north wall of the north iwan and in the form of the vault of a number of the rooms that flank the north iwan as well.

⁸⁴ Ettinghausen (1999), p.316.

drum windows.⁸⁵ A rope motif around the edge of a portal can be found as far afield as the contemporary Jedburgh Abbey (c. 1200 CE) in southern Scotland. These examples, along with the rope pattern on the drum of the Armenian cathedral at Edjmiatzin, dating from the 4th to 7th CE century, and the use of other stone carving techniques developed in the Georgian architectural tradition, point towards the repertoire of itinerant Christian stonemasons, either Armenian or Georgian, being the source of the rope motifs found on the Sivas hospital portal. It is a trans-regional and trans-denominational motif, rather than a specifically Turko-Muslim one.

Geometric frames

There is a close correlation between the form of the ashlar blocks which frame the portal and the two patterns that were cut into them. They demonstrate very precise planning and design of the pattern and block sizes prior to the cutting and placing of the ashlar blocks. The inner decorative panel is based on ten-pointed and fourteen-pointed stars, while the outer one is based on a combination of nine-fold and six-fold patterns. The middle of the flowers at the centre of the fourteen-pointed stars of the inner pattern coincides exactly with the vertical and horizontal points of intersection of the individual ashlars (fig. 4.13).

The right-hand side of the portal consists of courses made up of the two small ashlars of the inner panel next to two small ashlars of the outer panel, alternating with courses made up of two large blocks, one for each panel. On the inner panel the largest flower motif, with twelve petals, is reserved for the meeting point of the large block and the two small blocks above and below. The flowers cut into the larger block alone are smaller and have only eight petals.

⁸⁵ Mepisashvili and Tsintsadze (1979), p.195.



Fig. 4.13 – Portal (right-hand side) geometric frames © R. McClary

Muqarnas hood

There is a slightly pointed framing arch around the muqarnas hood which is delineated by a flat smooth band around a relief rope motif band. Inside it is a recessed band of intaglio vegetal pattern and two narrow bands of simple geometric pattern. The muqarnas hood of the Sivas hospital is the most elaborate of the surviving examples of the form to have been built up to that point, and it is a testament to the rapid advance in the scale and quality of muqarnas hood construction in the decades between about 565/1170 and 617/1220. It measures 462cm wide and 265cm deep at the base and is constructed from nine rows of stereotomic blocks, each row being carved with individual cells. These cells in turn form part of a larger underlying composition (figs. 4.14 and 4.15).



Fig. 4.14 – ‘Izz al-Dīn hospital, Sivas (614/1217-18); portal muqarnas hood and foundation epigraphy © R. McClary

Row	Number of Muqarnas Units	Ashlar Courses
1	1 x full	1
2	2 x full and 2 x ½ (half units on the face)	1
3	3 x full and 2 x ½ (half units on the face)	1
4	4 x full	2
5	5 x full and 2 x ½ (half units on the face)	2
6	6 x full (2 largest in corners)	2

Table 4.1 – Sivas hospital; portal muqarnas hood composition

Zoomorphic sculpture

The spandrels of the arch around the muqarnas hood each feature fragmentary remains of zoomorphic sculpture. Although damaged they appear to be a pair of affronted lions. Lion sculptures can be found on two antecedent portals of the late 6th/12th and early 7th/13th centuries. There is a fragmentary single lion on the west portal of the Çifte madrasa in Kayseri, dated to 602/1206 and a lion with a double body and a single head on the Alay han portal, built during the reign of Kılıç Arslān II in the second half of the 6th/12th century. However, the lions at Sivas are the largest of the surviving relief examples from the early period of Rūm Saljūq architecture.⁸⁶

The right-hand sculpture is more intact, but has less surviving surface decoration than the other one, although there are incised lines on the rump that appear to indicate fur. The outer rear leg is missing to reveal a surprisingly pronounced phallus, possibly a symbol of virility that would, most likely, have been hidden by a leg in its original state (fig. 4.15). The left-hand sculpture has textile-like decoration on the upper section and lines indicating fur on the underside but no head or limbs survive.⁸⁷ On the upper section there are remains of something riding the creature (fig. 4.16), but the losses are too great even to speculate as to its original form. Regardless, it is an unusual feature with no clear precedent in the very limited corpus of Rūm Saljūq sculpture. The lion has long been considered a protective animal and the connotation of power associated with lions is demonstrated by the name of sultans such as Kılıç Arslān II.⁸⁸ This combined symbolism helps to explain the use of lions on the entrance to a hospital that was founded by a sultan and is also the site of his tomb.

⁸⁶ The sizes as given in Öney (1969), pp.50-53 are 40cm x 30cm for the right-hand lion at Sivas, 40cm x 20cm for Kayseri and 45cm x 23cm for the Alay han lion.

⁸⁷ The curvature of the body echoes that of the opposite lion and when viewed from the side the curvature of the groin is visible, making it most likely that they are a pair of lions, as asserted in Öney (1969), p.50.

⁸⁸ *Ibid.*, p.43. *Arslān* means lion, as does *Lewon*, a name used by Armenian kings of Cilicia.



Fig. 4.15 – Portal; right-hand spandrel lion sculpture © R. McClary



Fig. 4.16 – Portal; left-hand spandrel lion sculpture © R. McClary

In order to better understand the original form of the lions, a comparison can be made with a slightly later silver *dirham* coin (fig. 4.17),⁸⁹ minted in Sivas in 640/1242-43. It features a striding lion in side profile, beneath an anthropomorphised sun similar to the one on the east iwan which is discussed below. The survival of the coins, as well as glazed tiles from various contemporary palaces, demonstrates the widespread use of the lion and sun imagery in royal contexts across the Rūm Saljūq sultanate in a variety of materials and scales.



Fig. 4.17 – Silver *dirham* minted at Sivas in 640/1242-43 © The David Collection

On the left-hand side of the portal, one row above the zoomorphic relief carving, there is a heavily weathered projecting stone element.⁹⁰ It may originally have been a plinth for a now lost sculpture but it is too badly damaged to determine with any accuracy. It appears to be set further into the structure than most ashlar are, and there are stress fractures extending from the corners in the stone below it. These are an indication of the projecting element having been load-bearing at some point (fig. 4.18). There is another projecting plinth on the outside left edge of the portal two rows above the sculpture. There is not a matching example of the outside edge plinth extant on the other side, and they may have had a similar function to the rather enigmatic projecting muqarnas plinths on the façade to the south of the portal.⁹¹

⁸⁹ <http://www.davidmus.dk/en/collections/islamic/dynasties/seljuks-of-rum/coins/c74> (accessed 05/05/2014) is the image source. Both sides of the coin are shown, along with a translation of the epigraphy. The coin, inventory C 74 in the David Collection in Copenhagen, measures 22 mm and weighs 3.02 g.

⁹⁰ Pre 2010 images show a damaged pair to it on the other side which has been removed and filled in during the recent restoration process.

⁹¹ Redford (1993), p.153, fig.8 reproduces a view published in 1836 by de Laborde which shows brackets set into the walls of Konya that support figural and zoomorphic sculptural



Fig. 4.18 – Projecting element on the upper left of the portal © R. McClary

The only other surviving figural sculptures in the complex are the two roundels on the spandrels of the east iwan. Although both are damaged, it is clear from the ray like form of the surrounding triangular decoration that the north roundel represents the sun (fig. 4.19), while the south one is a crescent moon (fig. 4.20). The face in the moon has plaited hair in two braids in the Central Asian manner. In both cases the heads are surrounded by the (fragmentary remains of the) *shahāda* in cursive epigraphy that reads *Lā ilāha illā Allāh wa Muḥammad rasūl Allāh*.⁹² Written below the sun, in two lines, is:

صورت
شمس

ṣūrat shams
image of sun

elements. It is quite likely, given the survival of the lion sculptures, that there was originally a wider programme of sculptural decoration of the façade and portal of the hospital.

⁹² Bayat (2006), p.361.



Fig. 4.19 – East iwan north spandrel figural roundel representing the sun © R. McClary



Fig. 4.20 – East iwan south spandrel figural roundel representing the moon © R. McClary

In addition, between the braids of the hair of the moon face is a rather more damaged inscription that may be read as:

قمر
صورة

qamar ṣūrat

moon image

It is interesting to note that the spelling of *ṣūrat* is different on each roundel. The integration of possibly pre-Islamic solar imagery with the Islamic profession of faith is an example of the syncretic nature of the dynasty and predates its use on later Rūm Saljūq coins and seals.⁹³ These two stone examples may be seen as evidence for the survival of pre-Islamic Central Asian shamanistic beliefs of the Türkmen being blended with Islam.⁹⁴ Given Ibn Bībī's description of sultan 'Alā al-Dīn as "the light of the great tribe's eyes and the sun and moon of the dynasty",⁹⁵ it is possible that the same idea was the motivation behind the use of the sun and moon reliefs on the Sivas east iwan spandrels, and that such attributes may have been adopted by earlier rulers such as 'Izz al-Dīn.

Façade muqarnas brackets

On the west façade of the building, to the south of the portal, is a series of three equally spaced blocks (fig. 4.22). The one on the left has remnants of muqarnas projections at the bottom, the middle one is too badly damaged to be interpreted and the third had remnants of different types of either a muqarnas cell or a blind shouldered arch niche. The motif of the shouldered arch on the blind panels between the muqarnas cells (fig. 4.21) is a small version of the ones used between the muqarnas cells on the first row of the main muqarnas hood and is further evidence of the unified design schema of the complex.

⁹³ The broader use of the lion, as well as the sun symbol, is demonstrated by a 9cm long bronze Rūm Saljūq seal thought to date from c. 637/1240 featuring a lion and sun motif. It was sold in London by Bonhams in 2013, see catalogue for sale 21359, lot 34.

⁹⁴ Peacock (2010), p.123 states that elements of Central Asian shamanism must have survived among the Saljūqs, as Turkic beliefs in the sacred nature of trees, animals and the stars were still prevalent in the 1960's, as they had been through the medieval and Ottoman periods. Alternatively, Yalman (2011), p.404 suggests, in a discussion of the two images in Sivas, that the moon reflecting the sun may refer to Prophet Muḥammad reflecting the light of God.

⁹⁵ Yalman (2011), p.384, citing Ibn Bībī facs. ed. fol. 223.

Although many of the ashlar of the upper section of the west façade around the brackets have been replaced over the years, the location, decoration and wear to the brackets makes it clear that they are part of the original structure. Their survival is most likely a result of them receding further back into the inner structure of the wall than the facing ashlars. Such a configuration would allow them to cantilever out and support a load. As the brackets are a unique feature in early Rūm Saljūq architecture, there is no precedent with which to compare them. There is no evidence to allow for anything other than speculation, but a possible explanation is that they were used as plinths for a programme of figural sculpture, as was probably also the case for the stone plinth on the portal.

The level of decoration, the scale and the combination of decorative elements marks the portal out as one of the earliest, as well as the finest, examples of the mature and developed Saljūq style of portal construction.



Fig. 4.21 – West façade projecting muqarnas plinth © R. McClary



Fig. 4.22 – ‘Izz al-Dīn hospital, Sivas (614/1217-18); west façade muqarnas brackets
© R. McClary

Entrance iwan

The projecting portal gives access to the entrance iwan. It has a more enclosed feel than the other three iwans because the entrance to the courtyard is filled with a curtain wall that has an off-centre small arched entrance under a window with a muqarnas frame (fig. 4.23). There are two large rooms on either side, one with a large iwan-like entrance and one with a small doorway. The roof consists of two cross vaults, with the easternmost of the two having a square opening. The west side of the north-east archway features a mason’s mark which is very similar to the one next to the tomb (fig. 4.43).



Fig. 4.23 – 'Izz al-Dīn hospital, Sivas (614/1217-18); entrance iwan looking east
© R. McClary

NORTH IWAN

With the exception of the arched façade, the stone vault of the east iwan is a mid-20th century construction (fig. 4.40). This makes the brick-built north iwan the largest surviving functional covered space in the complex, but what its original functional role was remains unclear. The north wall of the iwan features a pair of shouldered arched doorways (fig. 4.24). This shouldered arch form is echoed on a larger scale in the ceiling vaults of the rooms to the east and west of the iwan and contributes to the sense of decorative and architectural cohesion of the complex.⁹⁶ This is an important element of the overall design, considering the mix of brick and stone as well as the array of epigraphic styles and geometric patterns that are employed across the complex. The reason for having the unusual paired doors, rather than one in the centre, is unclear. There may have been a structural imperative on the part of the architect to support the centre of the tympanum curtain wall with a column of bricks, but the iwan form, being open on the front, makes this unlikely.⁹⁷

The *waqfiyya* of the hospital refers to a madrasa to the north and this pre-existing but now lost structure may in part explain the purpose of the twin doors in the north iwan.⁹⁸ The problem with such an explanation is that the structure of the hospital extends north beyond the doors and the north iwan.⁹⁹ This makes the madrasa access explanation somewhat problematic unless the two structures were connected in some way. The original function of the doors and the reason for their unusual twin form remains unclear.

⁹⁶ This approach may be related to the tripartite form of the tomb façade being repeated on a reduced scale in the form of the door and windows of the same room.

⁹⁷ The use of paired doors may instead be due to ceremonial or other functional requirements of which no record remains.

⁹⁸ Wolper (1995), p.42. The *waqfiyya* also mentions that the royal garden and the Yağibasan lodge formed the other two borders of the hospital. She also suggests that the building opposite the portal was a royal palace (*ibid.*, p.47). The recent excavations have revealed an as yet unidentified building which may be part of that palace, but Mr Altıgan Kaya, director of the Arkeoloji Müzesi in Sivas, is of the opinion that the excavated structure is not part of a royal palace (personal communication 20/5/2014).

⁹⁹ The north part of the structure in its current form dates from the 20th century but the excavations of the north-west corner of the site, illustrated in Çetintaş (1953), pp.86-88, photos A, B, B/1 and C, show that the footprint of the present structure appears to follow the original plan of the complex.

The north iwan features a niche in the east and west sides. Although not identical, they are very similar. Each one features a half-hexagon plan (a form reminiscent of the flanking niches featured on the majority of the stone built portals of the region),¹⁰⁰ three tier muqarnas hood, along with extensive use of glazed intarsia in the spandrels and on the muqarnas cells.¹⁰¹



Fig. 4.24 – 'Izz al-Dīn hospital, Sivas (614/1217-18); north iwan © R. McClary

¹⁰⁰ See chapter two, pp.37-94.

¹⁰¹ The west niche has been more extensively repaired, leaving the muqarnas cells with a layer of grey cement residue over the bricks and glazed intarsia as a result of the restoration work of 2010; consequently the analysis is focused primarily on the east niche.

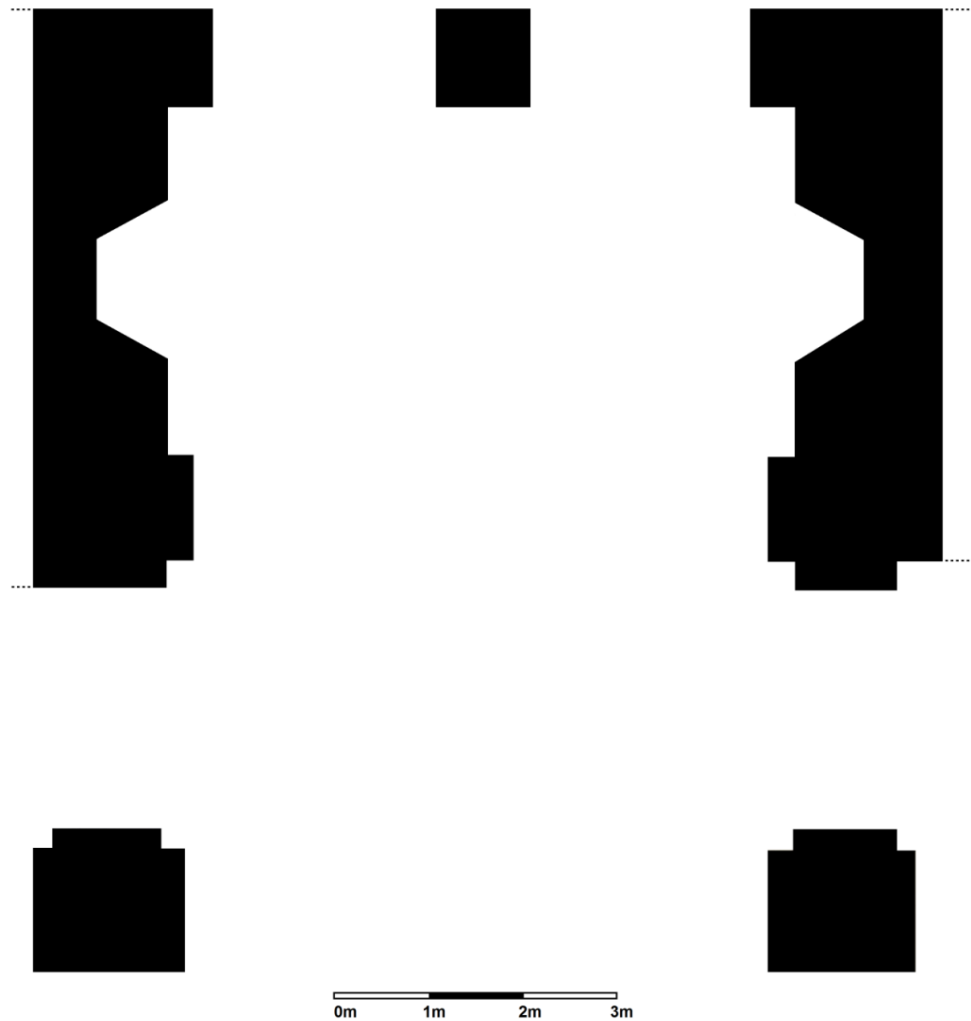


Fig. 4.25 – ‘Izz al-Dīn hospital, Sivas (614/1217-18); north iwan ground plan © R. McClary

The tympanum, vault, niches and walls, as well as the intrados of the *riwāq* arches of the iwan feature a number of incised mortar patterns in the rising joints. These are mostly connected together with incised lines in the mortar beds to create a series of broader compositions. There are extensive losses, but enough remains to determine the corpus of patterns employed by the craftsmen (figs. 4.27, 4.29 and 4.30). The only other part of the complex that features patterns in the mortar beds is an area of the south wall to the east of the tomb (fig. 4.31).

Beginning at the line of the inside edge of the *riwāq*, the vault is reinforced by a rib on each side, both of which are supported by engaged pilasters of brick.¹⁰² As well as having a structural role, the pilasters and springing of the ribs articulate the area

¹⁰² The pilasters and the ribs project 1.5 bricks, measuring 34cm including the rising mortar joint.

around the decorated intrados of the *riwāq* arches that spring at 90 degrees to the ribs.

The north iwan is one of the components in the creation of the internal north to south axial focus of the structure. The increased level of decoration, as well as the presence of the niches and the attenuated nature of the iwan (when compared with the other arches on the north façade of the courtyard) all contribute to this axial focus.



Fig. 4.26 – 'Izz al-Dīn hospital, Sivas (614/1217-18); north iwan and *riwāq* © R. McClary

Muqarnas niches

Like the rest of the north iwan, the functional role of the two niches remains unclear. Although similar in form to *mihrābs*, their locations, both in relation to the *qibla* and within a hospital context, clearly eliminates that option. They have a similar form and location as the niches commonly employed flanking stone portals, including the portal of the hospital. They are big enough for a man to stand inside but the reason why such an elaborately decorated structure, in such a location, was built has yet to be satisfactorily answered (figs. 4.25, 4.26 and 4.28). The form of the overall composition is strikingly similar to the shallower but somewhat larger niches on the exterior of the Mu'mina Khātūn tomb in Nakhchivān (582/1186).¹⁰³ The pointed-arch profile of the arch has been altered by the restoration, but pre-restoration images show more of the original profile in place.¹⁰⁴ As a result of weathering, and an unknown chemical cleaning treatment applied during the 2010 restoration, the surface plaster is stained grey, while the mortar underneath is brilliant white.

The forms of the muqarnas cells in the niches are similar to those used on the nearby Great Mosque minaret, as well as the tripartite cells of the later Eğri minaret in Aksaray.¹⁰⁵ There are three rows of cells, with the first row consisting of a triangle-plan cell on the front of both sides and a rhombus in each corner with each cell separated by a blind pointed-arch panel (fig. 4.28). All the cells are decorated with glazed and unglazed polygonal tiles, in the form of triangles, lozenges, pentagons and hexagons.

¹⁰³ See Gink and Turánszky (1979), p.8.

¹⁰⁴ With the exception of a few custom shapes, the bricks of the north iwan niches measure either 20.5cm x 5cm or 16cm x 5cm on the face.

¹⁰⁵ See chapter two, p.145; chapter three, pp.182-4 and appendix 2.9.

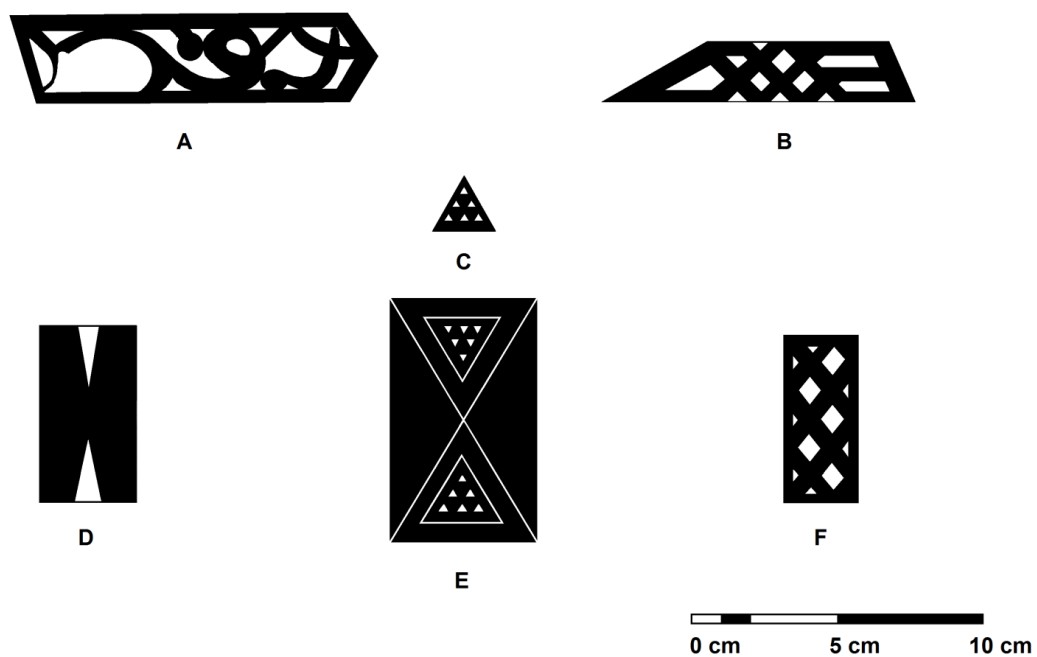


Fig. 4.27 – North iwan east niche mortar decoration © R. McClary

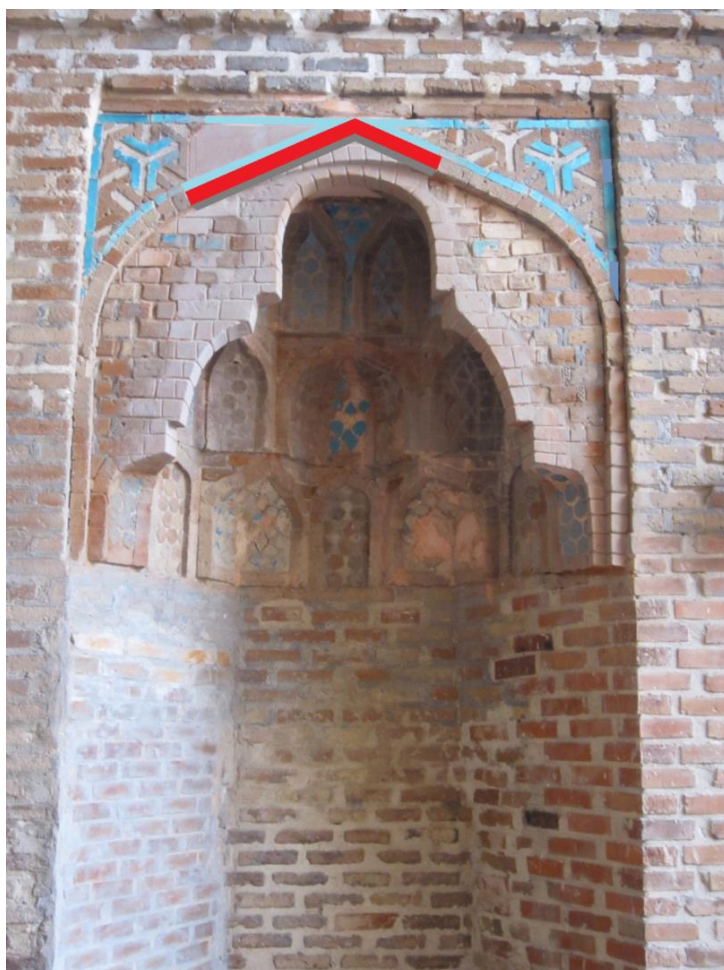


Fig. 4.28 – East niche in north iwan (original arch form outlined in red) © R. McClary

The central blind panel of the bottom row consists of a mix of pentagons and lozenges in unglazed tiles. The remaining triangular spaces are filled with incised mortar triangles with six cuneiform-like dots (fig. 4.27 C). These can be related to the rising joint incisions nearby in the brickwork of the wall that feature two of the same triangles tip-to-tip and help to unify the broader decorative scheme of the building (fig. 4.27 E).¹⁰⁶ A precedent for the use of polygons incised in plaster enclosing smaller triangular incisions, in the context of glazed tiles, can be found on the exterior of the Mu'mina Khātūn tomb in Nakhchivān (582/1186-7). The second row consists of three tripartite cells, while the third row is made up of two tripartite cells and two blind pointed-arch panels. The area where the two cells meet in the middle is decorated with glazed turquoise triangles and curves forward in the manner of the fan vault-like rhombus cells at the Kılıç Arslān II kiosk in Konya.¹⁰⁷ The profiles of the cells are delineated on the face of the niche to create a form similar to a tripartite shouldered arch. This is surrounded by a pointed blind arch, the spandrels of which are decorated with hexagon-based patterns consisting of both glazed and unglazed elements.

The bricks do not have rising mortar joint voids like most of the earlier examples of brick muqarnas in Anatolia,¹⁰⁸ but the mortar joints are still accented in a different and entirely Iranian manner, through the use of incised patterns.¹⁰⁹

The tripartite patterns in the spandrels of the two niches in the north iwan are almost identical to the much larger spandrels¹¹⁰ of the entrance to the Aḥmadīlī-era Gunbad-i Surkh in Marāgha, (542/1148).¹¹¹ The irregular shaped mortar joints between the intarsia in the spandrels are unique in Anatolian architecture, and feature foliated and

¹⁰⁶ They can both be related to a pattern used in the west wall (fig. 4.29.C), the difference being the use of three, rather than six, small incisions in each triangle.

¹⁰⁷ See chapter three, pp.177-108.

¹⁰⁸ See chapter three, pp.173-190.

¹⁰⁹ Hillenbrand (1972), p.51 states that incised rising joints are first seen in the south dome of the Iṣfahān Friday mosque, dated to 473/1080-81.

¹¹⁰ Bier (2012), p.259 described the decoration of the spandrels as having tessellation with three-fold symmetry and, like the Sivas north iwan niche spandrels, they consist of a mix of glazed and unglazed elements.

¹¹¹ See Godard (1936), pp.131-134 and Pope (1939), Vol. IV, pls.341 A and B.

angular patterns¹¹² (figs. 4.27 A and 4.27 B). The foliate pattern in particular is very similar to patterns carved into plaster on the exterior of the Ildegüzid Mu'mina Khātūn tomb in Nakhchivān. Both the form and the location, but not the scale, of the foliate incisions can be seen in the incised stucco decoration of the zone of transition of the dome in the Friday mosque at Qurva, Iran, dated to the 6th /12th century.¹¹³ The area between the edge of the muqarnas recess and the blind pointed-arch¹¹⁴ around it has a few surviving examples of two types of rising joint decoration running in alternating diagonal bands, one of which (fig. 4.27 F) is a more crude version of one employed in both the Qurva mosque and the Friday mosque in Sujās.¹¹⁵ The quality of the patterns carved into the plaster in the spandrels is of a far higher quality than that of the rest of the mortar incisions in the region of the niche.¹¹⁶ They represent the hand of a more skilled craftsman than that of the one who executed most of the rising joints.¹¹⁷ The only other surviving mortar incisions in Anatolia are on the Mengücek Gazi tomb at Kemah.¹¹⁸ These mortar incisions are, like brick muqarnas, another decorative feature which originated in the architecture of Iran, was introduced into Anatolia, but was not subsequently adopted by the craftsmen working there.

There are numerous similarities between the architectural form and decoration of the mausolea of the capital of the Khwārazm Shāhs in Gurganj¹¹⁹ and the hospital in Sivas. The deep ties between the craftsmen of the Gurganj and Anatolia have been noted before,¹²⁰ and when comparing the decoration of the Tekesh mausoleum,

¹¹² The process of cleaning during the recent repairs in 2010 has unfortunately led to extensive losses to much of the detailed foliate elements.

¹¹³ Hillenbrand (1976), p.101 and pl.VIIIa. Qurva is 70km west of Qazvīn.

¹¹⁴ The original form of the arch can be seen in the remains of the glazed spandrel border but the recent restoration has resulted in an inaccurate arch form. See fig. 4.27.

¹¹⁵ *Ibid.*, pl.IVc.

¹¹⁶ Subtle variations in the patterns show that they were carved freehand rather than impressed with a stamp.

¹¹⁷ The need for working faster on the drying mortar of the rising joints of the large expanses of brick wall, rather than the small individual sections between the tiles of the spandrel decoration, may be another reason for the more precise nature of the incised patterns in the spandrels.

¹¹⁸ See chapter two, pp.219-227, and Önkāl (1996), pl.56. The Kemah incisions are in rising joints and not foliated or knotted in the manner of the ones in the spandrels at Sivas.

¹¹⁹ The city, also known as Kunya Urgench, is located on the banks of the river Oxus in Turkmenistan.

¹²⁰ Mamedov and Muradov (2001), p.68.

thought to date from the late 6th/12th to early 7th/13th century,¹²¹ and that of the north iwan such connections can clearly be observed. The Tekesh mausoleum features a ten-tier muqarnas hood portal that, although built in brick, has a strikingly similar appearance to the stone portals of the late 6th/12th and early 7th/13th centuries in Anatolia. Clearly the movement of techniques and individuals was a two-way process, and not necessarily just a fleeing of Central Asian and Iranian craftsmen from the invading Mongols,¹²² although such a process would clearly have been under way as a result of the Mongol capture of Gurganj in 618/1221.¹²³ The incursions of the Khwārazm Shāh Jalāl al-Dīn into the eastern part of the Anatolian plateau in the early 7th/13th century are well documented¹²⁴ and it is possible that it was these campaigns that provided the point of contact between the two traditions. Both the Gurganj and the Sivas structures feature glazed turquoise bricks set into the baked brickwork to create lozenge-shaped patterns. In the north iwan they are on the intrados of the reinforcing rib vault, whilst at Gurganj they are on the exterior of the conical roof. The form of muqarnas and the insertion of small glazed intarsia can be seen on both structures as well. The drum of the Tekesh mausoleum features twenty-one half-hexagon niches topped with muqarnas. Although there are only two rows rather than three, the use of bipartite and tripartite cells can be seen in both cases.

The evidence for the extent of the Khwārazmian incursions into Anatolia in the early 7th/13th century is limited, but in 622/1225 they defeated the Ildegüzid rulers of Azerbaijan, (whose territory extended into the eastern region of Anatolia) and briefly absorbed their empire.¹²⁵ It may be assumed that earlier forays east would have been one of the means of artistic exchange between the two regions, as the armies required the services of architects and craftsmen to build siege engines, undermine walls and repair bridges.

¹²¹ *Ibid.*, p.63. The authors state that Tekesh died in 1200 CE and Juvaini records the building as being one of only two that survived the Mongol devastation of the city in 618/1221.

¹²² See Mecit (2011), p.69.

¹²³ For more details about the fall of Gurganj see Mamedov and Muradov (2001), p.19.

¹²⁴ Crowe (1975), p.29.

¹²⁵ Bosworth (1996), pp.199-200.

Mortar incisions

In addition to the incisions in the two niches, most of the rising joints in the north iwan have similar incised patterns, joined together by horizontal lines to create broader compositions. The use of incised decoration in the rising and bed joints of brick buildings is a technique developed in Iran,¹²⁶ where it is primarily employed on domed structures. In Anatolia there are only two surviving structures with such a form of decoration.¹²⁷ The mortar decoration in Sivas and Kemah is derived from the technique of inserted plugs, rather than incised patterns, a style that developed under the Great Saljūqs, with the earliest surviving examples being found in the south dome of the Işfahān Friday mosque (473/1080-81).¹²⁸

As has been seen above, the spandrels, muqarnas cells and the area surrounding the two niches feature an array of single, unconnected incised patterns in the mortar joints. Most of the rest of the brickwork of the north iwan also features incised patterns in the rising joints. However most of them are connected together so as to create broader compositions which enliven the appearance of the brickwork. Aside from the patterns associated with the niches, shown in fig. 27, there are nine patterns incised into the mortar joints of the north iwan, illustrated in figures 4.29 and 4.30. In addition, a slightly modified version of the pattern with a central disk (fig. 4.29 D) is used in the section of decorated mortar in the south wall to the east of the tomb façade (fig. 4.29 F)

¹²⁶ For details of examples in Qurva see Hillenbrand (1972), p.54.

¹²⁷ For details of the incised patterns at the Mengücek Gazi tomb in Kemah see chapter two, pp.219-227.

¹²⁸ Pope (1981), p.1040.

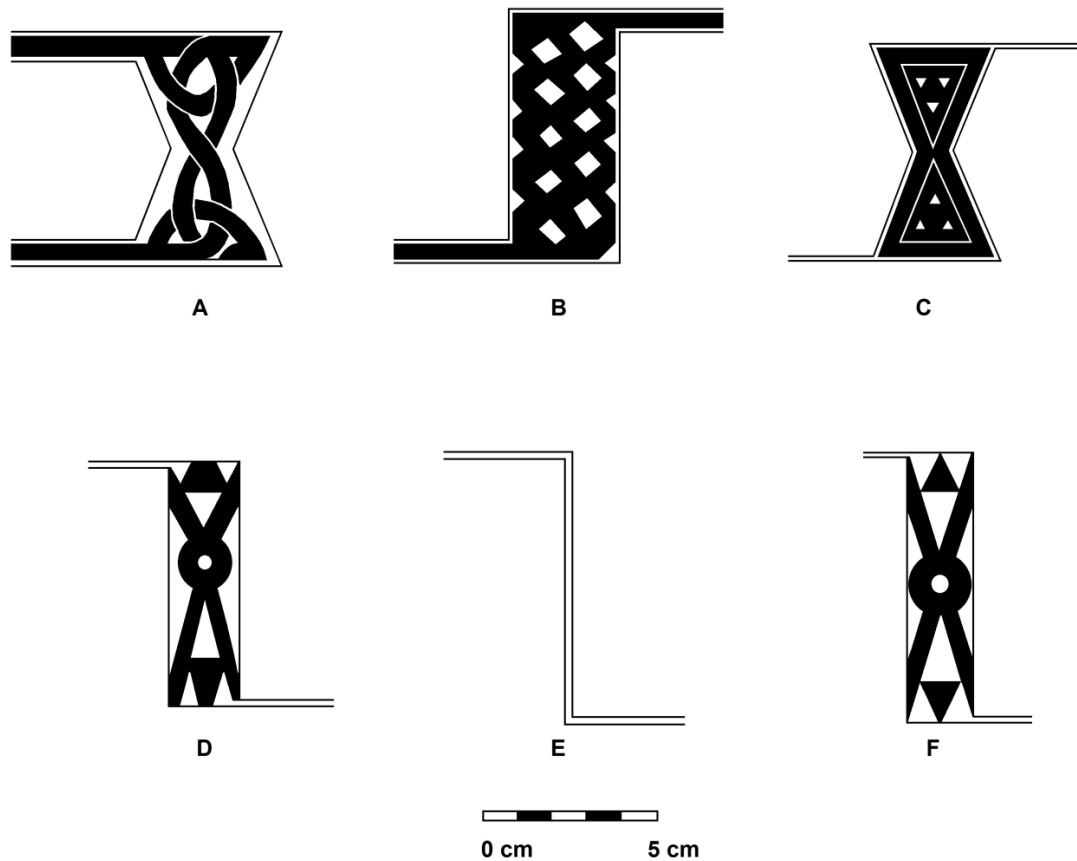


Fig. 4.29 – North iwan rectilinear rising joint incision patterns © R. McClary

The inspiration for the rather poorly executed and irregular pseudo-interlace¹²⁹ basketwork pattern (fig. 4.29 B) may well be found, in rather more carefully delineated examples, in the zone of transition of the Friday mosque in Qurva, 70km west of Qazvīn.¹³⁰ The patterns with a central disc (figs. 4.29 F and 4.29 D) are slightly narrower versions of a pattern commonly used in Iran, with examples surviving on the interior of the Pīr mausoleum in Tākistān, dated to the late 6th/12th century.¹³¹

The most accomplished of the incision types is the one that consists of triangular interlace (fig. 4.29 A). It is an example of true interlace and has precisely bevelled edges, and although irregular enough to preclude the use of a stamp, there is a degree

¹²⁹ The term pseudo-interlace denotes the lack of any attempt to indicate the intertwining and overlapping seen in the triangular interlace knot pattern, instead there are just irregular diamond shapes cut out. Most have 11 diamond shaped voids but they vary between 9 and 14 and the pattern is in all cases quite crudely executed.

¹³⁰ See Hillenbrand (1972), pl.VIIIa.

¹³¹ *Ibid.*, p.51, fig.3.

of uniformity not seen in the other patterns. The only place where it is used is on the vertical pilaster of the reinforcing rib in the north iwan. Unlike some of the other patterns used in the north iwan, there do not appear to be any examples on the antecedent structures in Iran. It may be an innovation of the craftsmen working in Sivas but there is only a small extant corpus upon which to base any assertions.

Alongside the interlace and triangular rising joints there are a number of variants of an epigraphic pattern that feature the word *Allāh*. Some are compressed, making the reading rather hard, but the majority are fairly legible (fig. 4.30 B). They are to be found on the south face of the main rib. There are also a few surviving examples on the west wall of the north iwan to the south of the niche. There are also two different types of curvilinear patterns, one of which is vaguely vegetal in style (fig. 4.30 A) and another that features a number of circles but due to the losses it remains unclear what the pattern originally depicted (fig. 4.30 C). The multiples of the only epigraphic incision pattern vary in width, which affects the level of clarity, compression and readability. The example shown in fig. 4.30 B is the clearest of the surviving examples. The most plausible reading of the pattern is *Allāh*, and this fits with the religious nature of much of the other epigraphy in the complex.

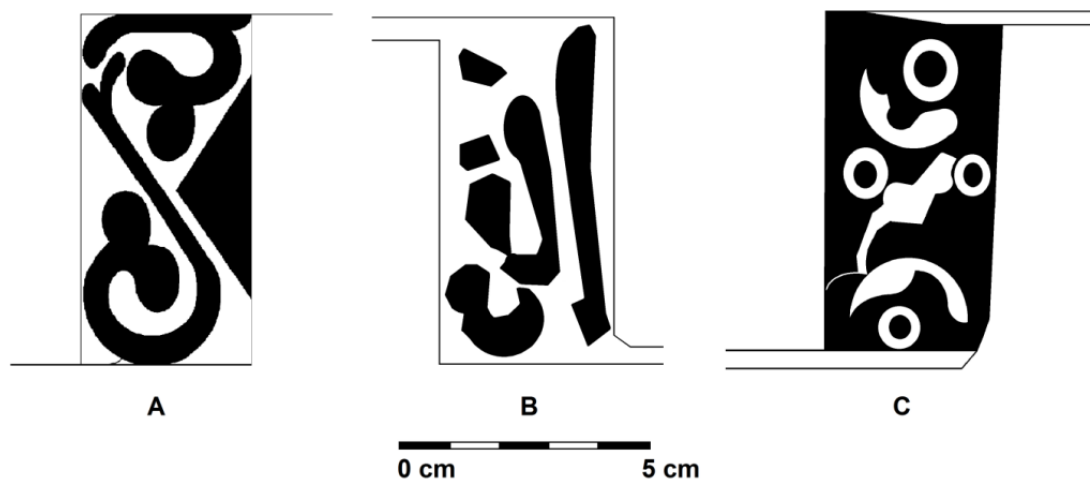


Fig. 4.30 – North iwan epigraphic and curvilinear rising joint incision patterns © R. McClary

Most of the rising joint patterns have a number of variants, depending upon whether they are free-standing, connected at all four corners or only at two corners. Of those

connected at two corners there are two variants; those with opposite top and bottom connections, and ones with top and bottom connections on the same side.¹³²

The vicissitudes of time have led to extensive losses to both the surface decoration of the mortar beds and, in several areas, to the loss and replacement of the bricks themselves. As a result, it is impossible to establish the full extent of the distribution of patterns around the building. Relatively large areas survive in the north iwan, as well as a small section, above the door of the room to the east of the tomb, on the south wall of the south *riwāq* (fig. 4.31). These surviving areas, coupled with the lack of any surviving fragments elsewhere in the building, indicate that the technique was used to emphasise the north to south axial emphasis of the structure and the general focus on the tomb entrance.



Fig. 4.31 – Mortar decoration east of ‘Izz al-Dīn tomb façade © R. McClary

The largest and best preserved areas of incised patterns are on the tympanum of the vault, the west pilaster and the iwan rib, the intrados, voussoirs and the supporting pillars of the arches over the *riwāq* on the east and west sides of the iwan. There is also the aforementioned section on the wall to the east of the tomb façade. There are three different large-scale patterns employed across the brickwork of the building, as well as an alternating single horizontal line incision to accentuate the brick voussoirs of the *riwāq* arches to the east and west of the north iwan.

¹³² Only one variant of each pattern is shown in figs. 4.28, 4.30 and 4.31. See figs. 4.33 and 4.34 for examples of variants.



Fig. 4.32 – Pattern 1 (west side of north iwan vault) © R. McClary

Pattern 1 (fig. 4.32) delineates four bricks, two side by side with one above and one below, forming a stepped diamond shape. It is delineated by a single line incised into the horizontal mortar bed, connected by the more simple of the two tip-to-tip triangle patterns (fig. 4.29 C) in the rising joints of the rib vault, and the triangular interlace pattern (fig. 4.29 A) connected by double incised lines on the vertical pilaster. In the centre, between the two end-to-end bricks of Pattern 1, are single unconnected rising joint patterns. In the vault the tip-to-tip triangles are used, with either that or the triangular interlace employed on the wall.

One of the closest antecedent examples of Pattern 1 can be found in the zone of transition in the Friday mosque in Qurva, the decoration of which is dated to 575/1179.¹³³ The rising elements, similar to the Sivas basketwork pattern (fig. 4.29 B), are linked with two lines of incisions into the mortar beds to create a step pattern around four bricks. The only differences are the lack of a surrounding Pattern 2 and the use of a square patterned or epigraphic design in the centre, rather than a rectangular one.

¹³³ Hillenbrand (1972), p.54 and pl. VIIla.



Fig. 4.33 – Pattern 1 inside Pattern 2 (transition from wall to vault on the west side of the north iwan) © R. McClary

Pattern 2 (fig. 4.33), the larger composition, is delineated around twelve bricks, (plus the four bricks of Pattern 1 which it surrounds). The basketwork incision (fig. 4.29 B) is used for all of Pattern 2 except for the top and bottom point of the stepped diamond shape. On the rib section, the repeats of the pattern are connected with tip-

to-tip triangles (fig. 4.29 E) and on the pillar there are triangular interlace patterns. The top and bottom points of Pattern 2 also form the lateral point of the continuation of the pattern to the left and right as it repeats across the brickwork, thus further varying the appearance of the pattern across a larger area.

In summary, there are three individual incision types on the pillar, and three on the rib. In both sections the roughly executed basketwork type is used for Pattern 2. On the upper section the two variants of two triangles tip-to-tip are used, the one with three incisions in each triangle for Pattern 1, and the one with six incisions to connect vertically the repeats of Pattern 2. The decoration described above for the rib is repeated on the tympanum of the vault on the north wall, while the brickwork on either side of the doorways below it is too badly damaged to determine the original nature of the decoration.¹³⁴

Pattern 3 is simpler, consisting of two alternating incision styles, offset from one course of bricks to the next, in order to create a diagonal pattern. Unlike the other patterns, the connecting bed joint lines, which extend along half the length of the bricks, all run in the same direction, rather than returning back to create enclosed patterns. Examples can be found on the intrados of the *riwāq* arches, the inside edges of the supporting pilasters of the two arches, and the section of brickwork with plaster incisions on the south wall to the east of the tomb façade (fig. 4.31).

In both the intrados (fig. 4.29 D) and the south wall (fig. 4.29 F) there is a narrow pattern with a central disk which alternates with a simple straight vertical line (fig. 4.29 E) connecting the lower right horizontal line with the upper left horizontal line. Although the incised patterns are similar in size, the patterns in the south wall appear overly narrow, at between 15mm and 18mm wide, as the rising joints between the bricks are much wider in the south wall than the one on the intrados of the *riwāq* arch.¹³⁵ The related patterns used on the intrados and the south wall are more like the most common pattern used to decorate the brickwork of earlier structures of Saljūq

¹³⁴ The area was buried until the excavation and repairs of 1937. There is not enough brickwork between, or on either side of, the doorways for the repeating pattern to have been used. See Çetintaş (1953), pp.59-60, plates F to F-3.

¹³⁵ The joints measure c. 6cm on the south wall, and less than 4cm on the intrados of the *riwāq* arch, which suggests that the two sections are the work of at least two different bricklayers.

Iran, namely an X-with-a-small-central-disk,¹³⁶ than any of the other patterns seen in the north iwan.

The spandrels of the two *riwāq* arches on the iwan side are decorated with alternating basketwork and tip-to-tip triangles to create Pattern 3 used on the intrados, but with different incision styles. The bricks comprising the voussoirs of the arch have one of the simplest patterns (fig. 4.29 D), with alternating connecting lines in the mortar bed running from top left and bottom right then *vice versa*. The pillar from which the arch springs features a combination of the simple two narrow triangles pattern (fig. 4.29 D) and the basketwork pattern to create Pattern 3.

There are only fragmentary remains of rising joint patterns on either side of the west niche. The section of wall between the east niche and the projecting pilaster to the south is decorated with patterns (fig. 4.29 E) that are connected with double incised lines and it is most likely that the other side was originally the same. It is also probable that all the rising joints on the walls below the lip demarcate the start of the vault (with the exception of the *riwāq* arch pilasters) were originally connected with double horizontal line incisions, whilst those above all have single line connections.

The joints between the brick voussoirs of the double doors in the north wall of the north iwan are, like the rest of the brickwork in the wall, decorated with incised patterns, shown in fig. 4.34.

¹³⁶ Hillenbrand (1972), p.51. It is an extremely common motif and occurs all over Iran. The tomb at Kemah uses an unmodified example of the Iranian pattern in the rising joints of the central octagonal column in the crypt. See chapter three, p.226, fig.3.58.



Fig. 4.34 – Western arch of the eastern door in the north wall of the north iwan © R. McClary

The overall pattern of the lines incised in the mortar of the vault, as well as two of the individual rising joint patterns, (the strapwork one (fig. 4.29 B) and the one that has *Allāh* (fig. 4.30 B)) are very similar to the ones found in the crypt of the Gunbad-i Kabūd in Marāgha (593/1196), built about twenty years earlier (fig. 4.35). Although the upper epigraphic joints are wider at Marāgha, in the manner of the ones seen in the Friday mosque in Sujās,¹³⁷ the lower ones are far narrower, like the Sivas examples. Such specific similarities are just one of the many examples which suggest that the brick architecture in Anatolia may be considered as the western terminus of a regional style of Persianate architecture that developed in the Ildegüzid-ruled lands of what is now Azerbaijan and north-west Iran.

¹³⁷ See Hillenbrand (1976), pl. IVc. *Ibid.*, p.98 dates the mosque to the 6th/12th century.



Fig. 4.35 – Crypt interior mortar joint patterns, Gunbad-i Kabūd, Marāgha (593/1196)
(photographed in January 1978) © R. Hillenbrand

Techniques

There is no clear evidence that there was a change in hands between the precisely carved true interlace patterns and the rather more crude execution of the basketwork pattern. It is possible that the triangular interlace, the two-triangles-tip-to-tip pattern, the connecting incisions and the rectangular border of the basket-work pattern were delineated by a master, whilst the inner section may have been left for a less skilled workman to execute. Depending upon the weather and the properties of the mortar, time may have been a factor which led to the need to delegate elements of the decoration, in order to facilitate a more timely execution of the incising before the mortar became too hard to incise clean lines into. This is not an entirely satisfactory answer as the basketwork patterns are consistently poorly executed across the iwan, not just in one section, and the reason why remains unclear.

Although they have not been tested, the bonding mortar that holds the bricks together is likely to be lime mortar,¹³⁸ while the very thin layer of plaster skimmed over the whole surface prior to the incision of the patterns and connecting lines appears to be gypsum-based.¹³⁹ The use of gypsum plaster (*gach* in Persian) was also the preferred material for the decoration of brickwork in Iran.¹⁴⁰ The recent chemical treatment of the original mortar has given a grey colour to the outer gypsum layer, but not the one underneath (fig. 4.36). This shows that the plaster skimmed over the top to give a smooth surface in which to incise the patterns is chemically different from the mortar used to bond the bricks together.



Fig. 4.36 – East pilaster and springing of east *riwāq* arch (stained gypsum plaster and underlying mortar after the 2010-12 cleaning and restoration) © R. McClary

¹³⁸ Tunçoku and Caner-Saltik (2006), pp.1886-1889 report that testing of 13th-century mortar in Konya has shown that the average percentage of lime binder in brick mortar is around 71%.

¹³⁹ Tunçoku, Caner-Saltik and Boke (1993), p.368 state that gypsum was widely used as plaster in 7th/13th century Rūm Saljūq architecture, and that the percentage of aggregate in the plaster was 3.8%, giving a far smoother surface than the 34.5% aggregate used in brick mortar (*ibid.*, p.373).

¹⁴⁰ Wulff (1966), p.134. As at the Haydariyya mosque in Qazvīn, a thin layer of plaster has been spread over the brickwork and mortar joints, but the layer is not thick enough to obscure the outline of the bricks themselves.

The brickwork of the walls, tympanum, *riwāq* arches and reinforcing rib consists of stretcher (horizontal) bricks, half offset from the course beneath. The exception to this is the main section of the vault, north from the rib to the tympanum, which is constructed with soldier (vertical) bricks half offset to the vertical courses either side. This is the only section of brickwork of its kind in the entire building. It adds further emphasis to the north iwan and its location in line with the tomb opposite.

Glazed tile lozenge patterns

The incised decoration is an exception, and it is glazed inserts which tend to be preferred in the Rūm Saljūq architecture of Anatolia. There are a number of surviving examples in the vicinity of the north iwan. They used rectangular sections of the same large square polychrome underglaze geometric tiles seen in the tomb (fig. 4.87), cut into *c.* 20cm x 5cm sections to fit with the bricks.

The location of the incised patterns emphasises the axial hierarchy of the structure, in conjunction with the increased attenuation of the arches nearer the north-to-south axis. In a similar manner, coloured glazed tiles were used to create the lozenge patterns. The intrados of the *riwāq* arch furthest west¹⁴¹ from the north iwan has a pattern formed from four tiles on each side (fig. 4.37), while the next closest *riwāq* arch to the north iwan has lozenge patterns formed with eight tiles (fig. 4.38). The arch on either side of the iwan features incised decoration, in line with the iwan itself, while the main rib of the iwan has two pairs of lozenges, formed from twelve tiles on each side, which are similar to the pattern 2 created by the incised mortar beds. The lower example being in the polychrome geometric underglaze tiles used on the *riwāq* arch intrados and on the tomb of ‘Izz al-Dīn, while the other is made up of turquoise glazed tiles (fig. 4.39). Unlike the lozenges of the *riwāq* arches, they are integrated with the incised rising joints to create the pinnacle of decoration at the very apex of the decorative focus of the northern section of the structure. In addition, the peak of the rib facing the tomb has a triangular turquoise tile inserted. The peak of the *riwāq* arch on the east side of the iwan is not glazed, but does feature decorative triangular bricks (fig. 4.40). Like the form of the niches, the lozenges

¹⁴¹ The arches to the west of the iwan still retain most of their lozenges but the more extensive losses and repairs to the eastern half of the iwan has resulted in none of the lozenges surviving on that side. However, both sides were probably originally decorated in the same manner.

bring to mind the exterior roof decoration of the Tekesh and the Il-Arslān tombs in Gurganj,¹⁴² then the capital of the other major post-Great Saljūq dynasty and Rūm Saljūq rivals, the Khwārazm Shāhs.



Fig. 4.37 – Glazed tile lozenge patterns; intrados of the *riwāq* 2nd bay west of the north iwan
© R. McClary



Fig. 4.38 – Glazed tile lozenge patterns; intrados of the *riwāq* 1st bay west of the north iwan
© R. McClary

¹⁴² See Mamedov and Muradov (2001), pp.47 and 69.



Fig. 4.39 – North iwan rib (W) glazed tile lozenges © R. McClary



Fig. 4.40 – Peak of arch over north *riwāq* on east side of north iwan © R. McClary

There are similar mortar incisions to those found in Sujās, Qazvīn and Tākistān, as well as the use of internal shallow brick muqarnas niches, described by Hillenbrand as possibly being the hallmarks of the Qazvīn style.¹⁴³ The similarity leads to the conclusion that the craftsmen responsible for the decoration of the brickwork in Sivas may well have been trained in the late 6th/12th century style of the Qazvīn region. What remains unclear is why the technique is not seen on any subsequent structures in Anatolia when the skills and the idea were so clearly available, given the quality of the work in the north iwan of the Sivas hospital.¹⁴⁴

Apart from the façade and drum of the tomb, the north iwan is the most elaborately decorated part of the brick structure of the hospital. The use of brick bonds and mortar bed incisions, as well as muqarnas niches and glazed tile inserts, all contribute to emphasise the axial importance of the area. It combines the use of both well-established and innovative incised patterns that grow out of the Iranian, possibly Qazvīni and Ildegüzid traditions, along with hints of Central Asian decorative motifs. What in Iran is generally reserved for domed mosque and tomb structures is, uniquely in Sivas, applied to a vaulted iwan in a nominally secular building, notwithstanding the religious tone of the epigraphy employed throughout the complex.

The visitor entering from the west and seeing the large east iwan initially experiences the impression of a stone-built structure on an east-west axis. However, the decoration of the north iwan has the effect of shifting this impression to a brick-built north-south axial focus. This directs the internal spatial emphasis of the whole structure towards the tomb, indicating that it was always part of the original design schema.

¹⁴³ Hillenbrand (1976), p.100.

¹⁴⁴ It is possible that the craftsmen returned to the east and were caught up in the chaos of the Mongol invasions. Alternatively, the cost of fuel may have made stone construction more economical.

COURTYARD

After passing through the doorway and along a short vaulted passage the visitor emerges through a relatively small arched opening that is similar in size to the portal entrance and much smaller than the three main iwans. Above the entrance arch is a recessed shouldered-arch window topped by a muqarnas hood. It is flanked by a shallow iwan on each side, each of which is twice the height of the entrance arch. Consequently, although from the ground plan the complex looks like a four-iwan structure (fig. 4.2), when viewed from within the courtyard it looks as though it has three cardinal iwans and an entrance passage. The primary elements of the interior are the north iwan and the tomb but there are a number of other features which also deserve close examination. The largest iwan, to the east, is immediately ahead upon entering the courtyard, with a *riwāq* running towards it along the north and south sides. The courtyard and *riwāqs* feature a wide array of epigraphic styles in a variety of materials and demonstrate the eclectic and syncretic nature of the conception and execution of the entire complex.

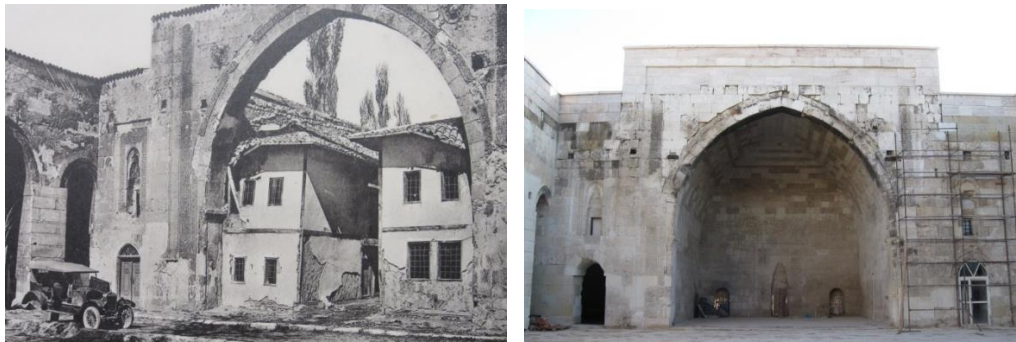


Fig. 4.41 – East iwan before (L) reconstruction (after Gabriel (1934), pl.36-1) and after (R)

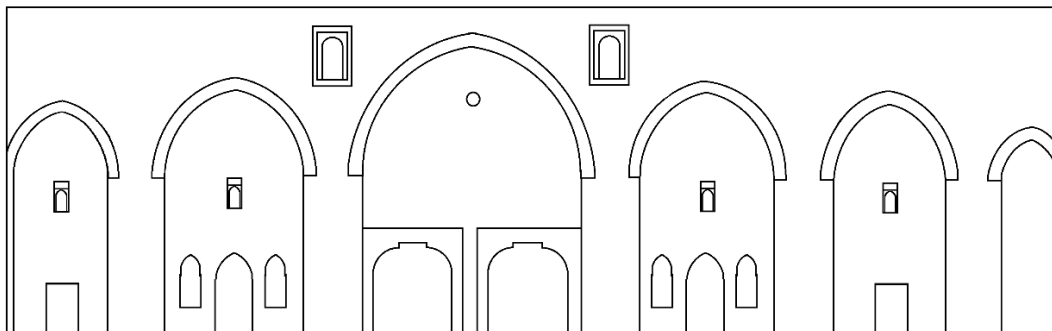


Fig. 4.42 – ‘Izz al-Dīn hospital, Sivas; north façade of courtyard¹⁴⁵ © R. McClary

¹⁴⁵ Reconstruction of the original appearance, based on direct observation and elements of Gabriel (1934), p.147.

Riwāqs

The two *riwāqs* have a similar appearance externally, but the south one has a number of unique characteristics that require closer analysis. Unlike the north *riwāq*, the south one extends at its full width the length of the building to the external walls at the east and west ends (fig. 4.2). The rooms off the north *riwāq* are of a somewhat more elaborate nature than those off the south *riwāq*. The room that is accessed from between the westernmost section of the north *riwāq*, being the second room to the west of the north iwan, may be viewed as something of a microcosm of the whole complex. The north wall and east wall both feature a large shallow arched recess like an iwan, while the west wall has two niches like the large arches either side of the small entrance in the west wall. In keeping with the other rooms that face the tomb, the south wall has a tripartite form with a pointed arch over the door and a smaller pointed-arch recess either side. The original function of the room is unclear, but it is likely to have been of greater importance than most of the others, given the increased articulation of the walls and its sense of being a small version of the whole building. The roof, like all the rooms along the north *riwāq*, has a shouldered-arch profile. Considering the teaching and treatment functions of medieval Islamic hospitals, and the large number of books on medicine¹⁴⁶ it is likely that such a large royal foundation would have had a library. Given the increased articulation and recesses in the walls it is possible that this room was the library of the complex.

The arches across the south *riwāq* either side of the tomb are the only ones that are built in stone, with the rest being brick (fig. 4.44). The result is the further emphasis of the north to south axis, with the tomb acting like a *maqṣūra* before the *miḥrāb*.

¹⁴⁶ Nasr (1987), p.89. The complex is likely to have had copies of text by writers such as al-Ṭabarī, Rhazes, al-‘Abbās al-Majūsī, ibn Sīnā, Riḍwān and many others. He goes on to give an overview of medieval Islamic medicine and the beliefs and practices espoused by authors whose texts survive (*ibid.*, pp.188-229).

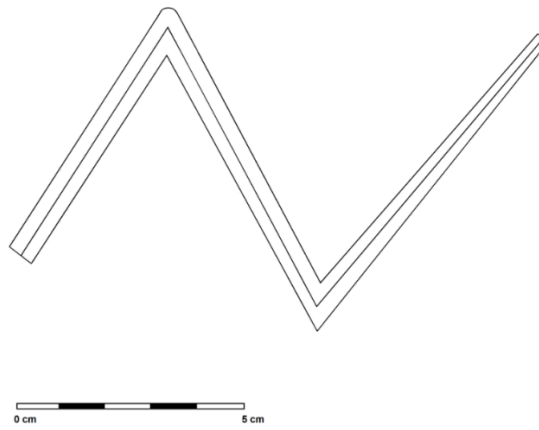


Fig. 4.43 – Mason's mark located to the right of the tomb entrance, south *riwāq* wall
© R. McClary



Fig. 4.44 – South iwan and *riwāq* (red circle indicates the mason's mark) © R. McClary

The only clearly identifiable mason's marks on the building are located at eye level on the south wall of the south *riwāq*, on the pillar to the left of the tomb entrance (figs. 4.43 and 4.44), and to the west of an arch in the entrance iwan. They each

consist of a V-groove in the shape of an italicised *N* and are of a similar nature and size, but different orientation, to a number of the masons' marks on the façade of the Atabey Ertokuş madrasa at Atabey near Isparta,¹⁴⁷ built in 621/1224. It is possible that the same stonemasons were involved in the construction of the stone elements of the two structures, especially considering the similarity in the tripartite form of the tomb façades at each site.¹⁴⁸

Star vaults

The hospital features three star vaults, two large ones in the south *riwāq* and one small one in the north. The western star vault in the south *riwāq* was extensively reconstructed in the 20th century, but enough of the original form remains to determine that it has been rebuilt in a manner that is close to its original state (fig. 4.45 and f in fig. 4.2). It covers an irregular square, and the north corners spring from stone muqarnas brackets, while the south corners spring from bricks.¹⁴⁹ Each of the four quadrants consists of three lines creating four facets. Although these are the most common permutations of star vaults in Rūm Saljūq architecture,¹⁵⁰ this is the only example which does not resolve with an octagon in the centre.¹⁵¹ Two bays to the east of the tomb is a cross vault with a recessed star in the centre that provides symmetry to the composition of the *riwāq* (fig. 4.46 and g in fig. 4.2). From the star vaults to the corresponding exterior wall the *riwāq* becomes a vault with a pointed-arch profile, giving the whole length a sense of increased decoration and attenuation towards the north-south centre axis and the tomb. Additionally, at the east end of the north *riwāq* is a small star vault that is the only example in Anatolia with a two-line three-facet (per quadrant) composition.¹⁵² The star vaults in Sivas are unusual in a

¹⁴⁷ The city is north of Antalya in the south-west of Anatolia, shown on the map (fig. 1.1).

¹⁴⁸ See the tomb section below, pp.344-372

¹⁴⁹ See Appendix 4.4 for a sectional drawing of the vault.

¹⁵⁰ Numerous antecedent star vaults can be seen in the Friday mosque in Isfahān. See Pope (1938), Vol.3, pls.296 and 303 A and B.

¹⁵¹ Yavuz (1993), p.167 gives the measurements as 4.2m (N) x 4.24m (S) x 4.32 (E) x 4.26m (W) and states that it is the only one of its type in Anatolia without an octagonal centre, but so much had fallen that it is unclear if that was indeed the case, as the reconstruction of the centre is conjectural. It is incorrectly described as being to the east of the tomb, and the vault that is in the east is not mentioned. Yavuz states that 22 star vaults survive intact or in part from the 6th/12th and 7th/13th centuries in Anatolia (*ibid.*, p.166).

¹⁵² *Ibid.*, p.167. The small vault has been covered by a false wood ceiling in the recent restoration and is not accessible.

number of respects. Not only do they have unique forms, but they are (with the exception of the small one in the north *riwāq* which is open on four sides) open on three sides, whereas the other examples in Anatolia are only open on one side.¹⁵³

Close analysis of the fabric of the building reveals the presence of a combination of stoneworkers that may be associated with a structure near the western border of the Rūm Saljūq sultanate, brick workers building in the Ildegüzid style of north-west Iran and epigraphy in an eastern Iranian style. This indicates the diverse array of craftsmen and techniques employed in the construction of the complex.



Fig. 4.45 – South *riwāq* star vault (west) © R. McClary

¹⁵³ *Ibid.*, p.173.



Fig. 4.46 – South *riwāq* star vault (east) © R. McClary

Epigraphy

There is a very diverse programme of epigraphic styles in both Arabic and Persian around the courtyard, on the tomb façade and around the *miḥrāb*. The use of Persian may be seen to provide further evidence of the Perso-Islamic aspirations of the dynasty, while Arabic is used for foundation inscriptions and all the Qur'ānic epigraphy. There is a clear stylistic division between the epigraphy of the north

riwāq and that of the south. There are two unglazed brick Kufic panels in the south *riwāq* and two glazed cursive panels (in Persian) in the north *riwāq*. There are also cursive Persian inscriptions in stone on the two cornices at the springing of the east iwan arch. In the north *riwāq*, east of the north iwan, there is a panel of turquoise-glazed cursive Persian epigraphy. The panel has suffered losses, partially as a result of the recent cleaning (fig. 4.47) and appears to read;

من که آن گنهی کرده ام (?) این ... که کریمی آن کن که آن کریم برد

Man ke ān gunahī karda-am (?) īn ... ke karīmī ān kun ke ān karīm barad

I who have committed that sin... since you are generous, act in such a way so that the generous one (Allāh) will accept it.



Fig. 4.47 – Persian glazed epigraphic panel on the north wall, one bay east of the north iwan
© R. McClary

The next bay to the east has a space for another panel but it is now missing. On the opposite side of the north iwan, one bay to the west, is a panel of white glazed epigraphy on a red ground (fig. 4.48). It is divided into two parts and reads;

عز و بقا و شادی (?)
کز (?) تو مباد خالی

‘Izz wa baqā wa shādī (?)

K-az (?) to mabād khālī

Glory, longlastingness and joy. May you never be deprived of them.

The next bay west has half of a panel that appears to have almost identical epigraphy (fig. 4.49). The content of these two phrases appear to give a funerary connotation to the entire interior space of the complex, rather than just the tomb in the south iwan.



Fig. 4.48 – Epigraphic panel, one bay west of the north iwan © R. McClary



Fig. 4.49 – Fragmentary epigraphic panel, two bays west of the north iwan © R. McClary

Although the written content of the panels in the south *riwāq* adds little to the understanding of the structure, elements of the calligraphic decoration are of great use in understanding the likely origins of some of the craftsmen involved. The Kufic panel on the south wall of the bay to the east of the tomb façade (fig. 4.50) reads:

المك الله

al-Mulk li 'llāh

*Kingship is God's*¹⁵⁴

This example of doxology is commonly used in religious inscriptions.¹⁵⁵ As a result of the use of a form of *hastae* decoration that is otherwise unique to Khurāsān, it appears likely that there were Khurāsāni craftsmen who had previously worked in the Herāt area for the Ghūrids involved in the construction of the Sivas complex.¹⁵⁶ The tops of the *hastae* in the Khurāsāni and Sivas examples are decorated with what could be described as a zoomorphic form of decoration (fig. 4.50).¹⁵⁷ There is another Kufic panel, again located above a small window high up on the next arch to the east below the east star vault, which has eluded translation. This is due to a combination of lacunae and unusual letter forms, probably the result of a rather slipshod attempt at restoration (fig. 4.51).¹⁵⁸ There is a rectangular panel beneath the west star vault, but in that case there is a combination of sleeper (horizontal) and

¹⁵⁴ An alternative, and not entirely dissimilar, reading would be *al-Malik Allāh* (God is King).

¹⁵⁵ Sourdel and Sourdel-Thomine (2007), p.119.

¹⁵⁶ Hillenbrand (2002), p.141, fig.12.6 shows similar examples of *hastae* decoration from Shāh-i Mashhad, Herāt, Chisht and Peshwaran.

¹⁵⁷ Unlike the Ghūrid examples, the first *alif* in the Sivas panel has the bottom decorated rather than the top.

¹⁵⁸ For example, the upper portion of an *alif* or *lām* has been used to form the upper right part of the frame.

soldier (vertical) bricks arranged to create a pattern of two squares instead of having epigraphy.



Fig. 4.50 – Ghūrid style Kufic panel in the bay to the east of the tomb façade © R. McClary



Fig. 4.51 – Kufic panel below the west star vault © R. McClary

There are two small cursive Persian inscriptions in stone on the two cornices at the springing of the east iwan arch. The one on the north side of the arch is relatively intact and is split into two by a vertical bar in the centre (fig. 4.52). The content may be titular, as the first panel ends with:

اقبال و عز

iqbāl wa ‘izz
acceptance and glory

The second panel, on the north springing of the east iwan arch ends with:

که هست اوشه اله (?) دنیا و دین

Ke hast ū shah ilāh (?) dunyā wa dīn
For he is God’s own shāh of the world and religion

The first two thirds of the south inscription are missing (fig. 4.53), and the only section that is readable states:¹⁵⁹

باشد خداوند این

...*Bārshad Khūdāvand īn*
...*This one may be Lord (?)*



Fig. 4.52 – Persian epigraphy on north springing of east iwan arch © R. McClary



Fig. 4.53 – Persian epigraphy on south springing of east iwan arch © R. McClary

East Iwan framing patterns

In addition to the Persian epigraphy at the springing of the arch, and the two figural and epigraphic roundels in the iwan spandrels discussed above, there are also two geometric bands framing the iwan. The patterns closely correspond to the ashlar, leading to the conclusion that they were carved before installation, much like the entrance portal. The inner border is unique to the complex, and consists of two different variants of an eight-lobed pattern surrounded by curvilinear infill. The outer border consists of a complex overlay of six-fold and twelve-fold patterns with one full repeat of the pattern on each ashlar (fig. 4.55). It is also employed over the upper right window with a muqarnas hood on the façade of the east iwan.

¹⁵⁹ The script is a mixture of *naskh*, *thulth* and *ta'liq* with a number of redundant reading marks and decorations. The translation and interpretation of all the epigraphy in the courtyard is the result of a great deal of generous advice and assistance provided by Bruce Wannell.

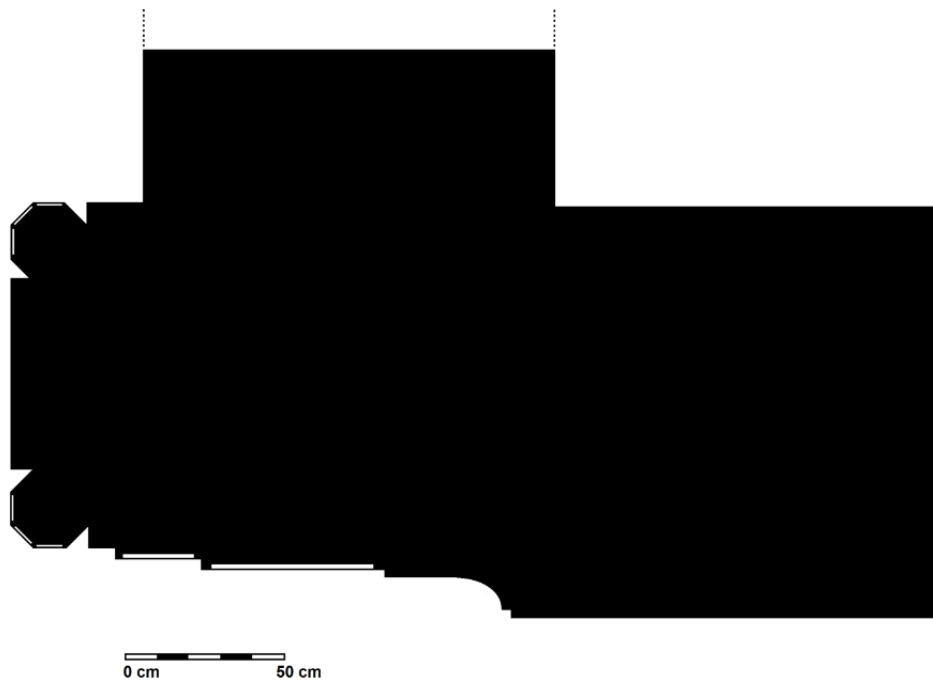


Fig. 4.54 – East iwan cross section (south side) @ 180cm above current grade
© R. McClary

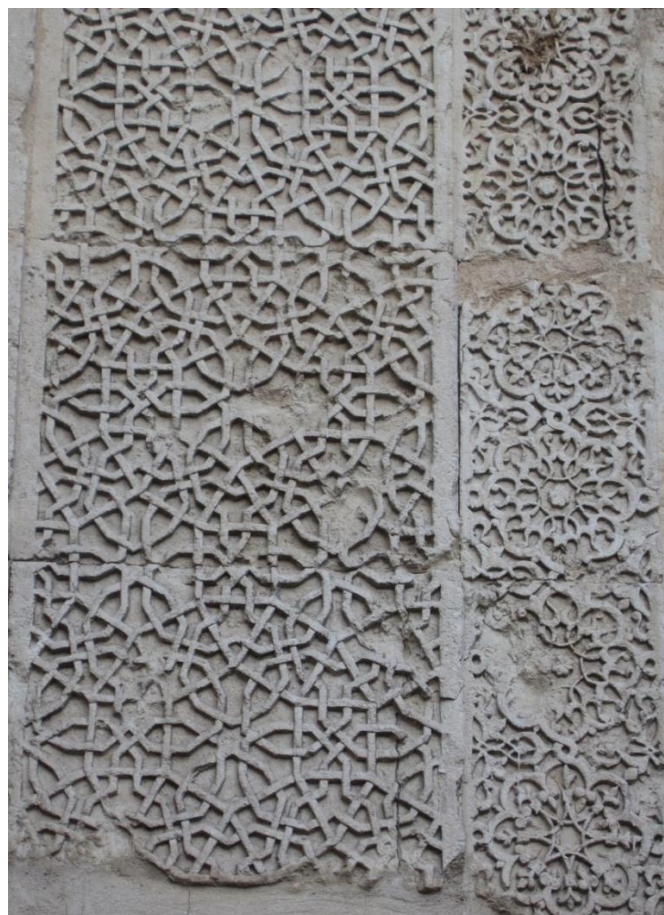


Fig. 4.55 – East iwan frame decoration (north side) © R. McClary

Courtyard muqarnas niches in stone

The courtyard features four niches with muqarnas hoods framed with geometric borders. They have a similar form to *mihrābs*, but are all windows, with the one in the east end of the east iwan being the only one at ground level. There is one above the entrance arch in the west side of the courtyard, and the other two flank the upper section of the east iwan. The east iwan niche has six tiers of muqarnas with a plain supporting cornice on each side, and is framed by the most complex pattern in stone in the whole complex, which is a virtuoso display of geometric design (fig. 4.55). It consists of a mix of eight, ten, twelve and sixteen-fold patterns, with flowers in the centre of the sixteen-pointed stars. The frame is surrounded by a shallow plain *cavetto* that recesses the whole composition into the wall slightly (fig. 4.56). The interlocking combination of so many different geometric patterns together is most unusual in Islamic art,¹⁶⁰ and its complexity suggests that the master of works employed the finest craftsmen available at the time. It appears to be the earliest example in Anatolia of such a complex mix of patterns. Upon entering the courtyard, having just passed through the portal, the east iwan window surround has the appearance of another portal in the distance.

The window with a muqarnas hood over the entrance arch is immediately opposite, but higher up than the one in the east wall and is of a similar nature, but has a muqarnas cornice supporting the hood. It also has a simple bevelled edge rather than a *cavetto* recess. The frame is simpler, being made up of an eight-fold pattern, and the arch over the window features a narrow centred shouldered arch in the same manner as much of the portal decoration, which adds to the decorative unity of the inside and outside of the complex (fig. 4.58). On the upper section of the east iwan façade are two more windows with muqarnas hoods, each slightly different, with the one on the left featuring five tiers of muqarnas with a ten-fold pattern on the sides and a simple six-fold repeat along the top. In contrast, the one on the right has an eight-fold pattern along the sides with a flower in the middle of the eight-pointed

¹⁶⁰ Broug (2013), p.176 states that experts in one pattern seldom combined compositions.

stars. The muqarnas are simpler but much repaired, as is the top band of decoration, which is the same as the outer band framing the iwan.¹⁶¹



Fig. 4.56 – East iwan niche geometric frame © R. McClary



Fig. 4.57 – Muqarnas niche in the centre of the east wall of the east iwan © R. McClary

¹⁶¹ There are two more openings which are larger than the regular windows throughout the complex but they do not feature muqarnas hoods. They follow the line of the columns of the north and south iwans, with the mid-point of the openings level with the apex of the iwan arch, and although extensively restored, the example to the east of the south iwan has a six-fold pattern on the frame.



Fig. 4.58 – Window niche above west entrance to courtyard © R. McClary

Area	6-fold	8-fold	9-fold	10-fold	12-fold	14-fold	16-fold
Portal frame (outer)	x		x				
Portal frame (inner)				x		x	
Portal niches frame	x						
Courtyard window over entrance		x					
Windows flanking south iwan	x						
East iwan frame (outer)	x				x		
East iwan rear niche frame		x		x	x		x
Window north of east iwan (side)	x						
Window north of east iwan (top)				x			
Window south of east iwan (side)		x					
Window south of east iwan (top)	x				x		
Tomb façade central panel	x						
Tomb façade east panel				x			
Tomb façade west panel				x			
<i>Mihrāb</i> frame		x			x		
Drum blind panels (4 x east facing)	x						

Table 4.2 – Distribution and types of rectilinear geometric patterns

Timber

All around the upper section of the north, south and west facades of the courtyard there are stubs of oak timbers or voids where square timbers were projecting from the ashlar, two of which are visible in fig. 4.58. The original purpose of the beams is unclear but a coeval structure in Cairo, the tomb of al-Shāfi'ī (614/1217), has similarly spaced timber brackets, projecting about one meter, to support a beam that runs around the structure, from which lights are hung.¹⁶² The surviving timbers can still prove useful now for obtaining another reference point for the dating of the structure. The date on the portal probably refers to the foundation date, but the chronology of the construction process remains unclear. Two of the sections on the west side were the source of the samples that have been dendrochronologically analysed, and they provided a probable felling date of 1215 CE.¹⁶³ It is, therefore, likely that the construction process, or at least the gathering of materials, began prior to the date of 614/1217-18 given in the portal epigraphy.

¹⁶² See Ettinghausen and Grabar (1994), p.308, fig.333.

¹⁶³ Kuniholm (1996), p.405. The process of dendrochronology involves the comparison of the tree ring widths with an established database compiled with samples covering the last 3000 years. It can provide a great degree of accuracy, and if the outer sapwood is present the exact year of felling can be stated.

‘IZZ AL-DĪN TOMB

The tomb of ‘Izz al-Dīn Kay Kāwūs I, built in the south iwan of the hospital, is the most visually striking and vertically elevated element of the whole complex. It features a tripartite façade decorated with a vibrant mix of glazed tile and baked brick patterns and epigraphy. The central entrance, under a blind pointed arch, is flanked on either side by windows under slightly lower arches of a similar form. Above is a full width band of cursive Arabic epigraphy, and the tympanum of the arch is decorated with square Kufic epigraphy which repeats the word Muḥammad. Rising above the iwan is a decagonal drum with blind arched facets decorated with geometric patterns in brick, which has an internal dome and a ten-faceted roof (fig. 4.59). In the south wall of the tomb is a *miḥrāb* with a muqarnas hood surrounded by epigraphy. The tomb has a number of unique features, but there is also one unique aspect regarding its function, as all the other Rūm Saljūq sultans after Ma‘ṣūd are buried in the tomb of Kiliç Arslān II, in the courtyard of the citadel mosque in Konya, also referred to as the Aladdin mosque.¹⁶⁴ It is clear that his burial in Sivas was intentional, as Ibn Bībī wrote that ‘Izz al-Dīn was buried in his newly-built hospital at his own request.¹⁶⁵

There is a degree of ambiguity regarding the date of ‘Izz al-Dīn’s death¹⁶⁶ which complicates the issues of the dating and the patronage of the tomb. The date on the façade, 4th Shawwāl 617/2nd December 1220, is nine months after the last possible date for his successor, ‘Alā’ al-Dīn Kay Qubādh (r.616-634/1220-1237), to have become sultan, demonstrating that the tomb was completed during the reign of ‘Alā’ al-Dīn. This chronology is based on a treaty with Venice, signed by the new sultan in Muḥarram 617/March 1220, and the discovery of coins with his name dated 616/19th March 1219-7th March 1220.¹⁶⁷ This means that the construction process straddled the rule of the two sultans. However, it was most likely to have been commissioned by ‘Izz al-Dīn. When viewed from outside the complex, the brick drum projects the

¹⁶⁴ Redford (1991), p.71. For details of the tomb in Konya see appendix 4.1.

¹⁶⁵ Yalman (2011), p.176, citing Ibn Bībī facs. ed. fol. 199.

¹⁶⁶ See chapter one, p.26.

¹⁶⁷ Martin (1980), p.324.

sultanic colour red¹⁶⁸ across the city (fig. 4.59), as does the brick minaret of the Great Mosque nearby.



Fig. 4.59 – ‘Izz al-Dīn hospital, Sivas; south wall and tomb © R. McClary

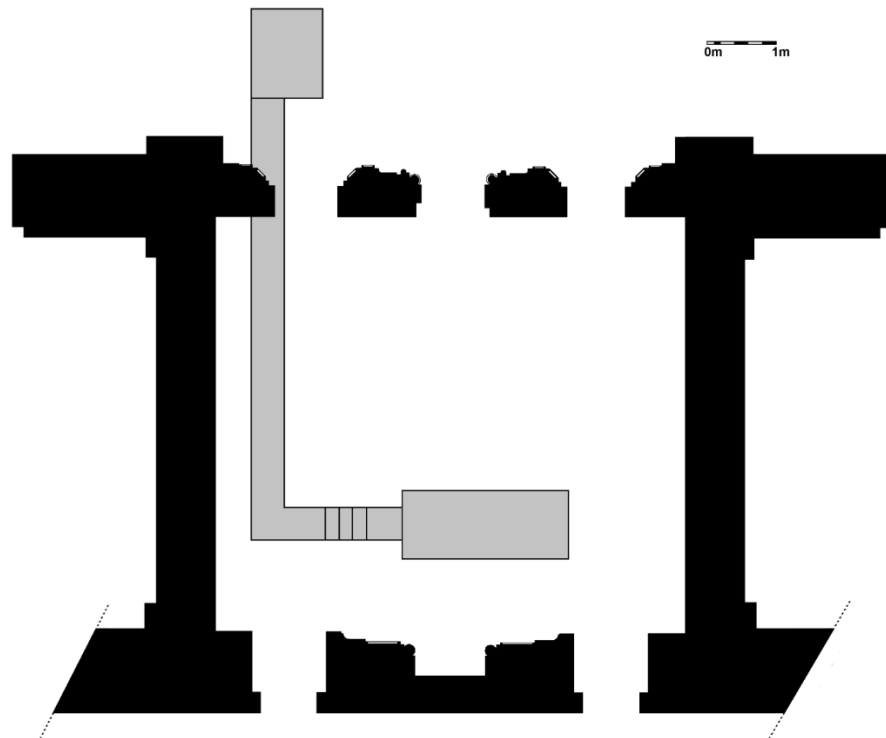


Fig. 4.60 – ‘Izz al-Dīn tomb cross-section (black) and crypt plan (grey) © R. McClary

¹⁶⁸ Flood (2009), p.234 notes that red was the colour of royal insignia in Ghūrid India and Rūm Saljūq Anatolia.



Fig. 4.61 – ‘Izz al-Dīn tomb; façade cross-section © R. McClary

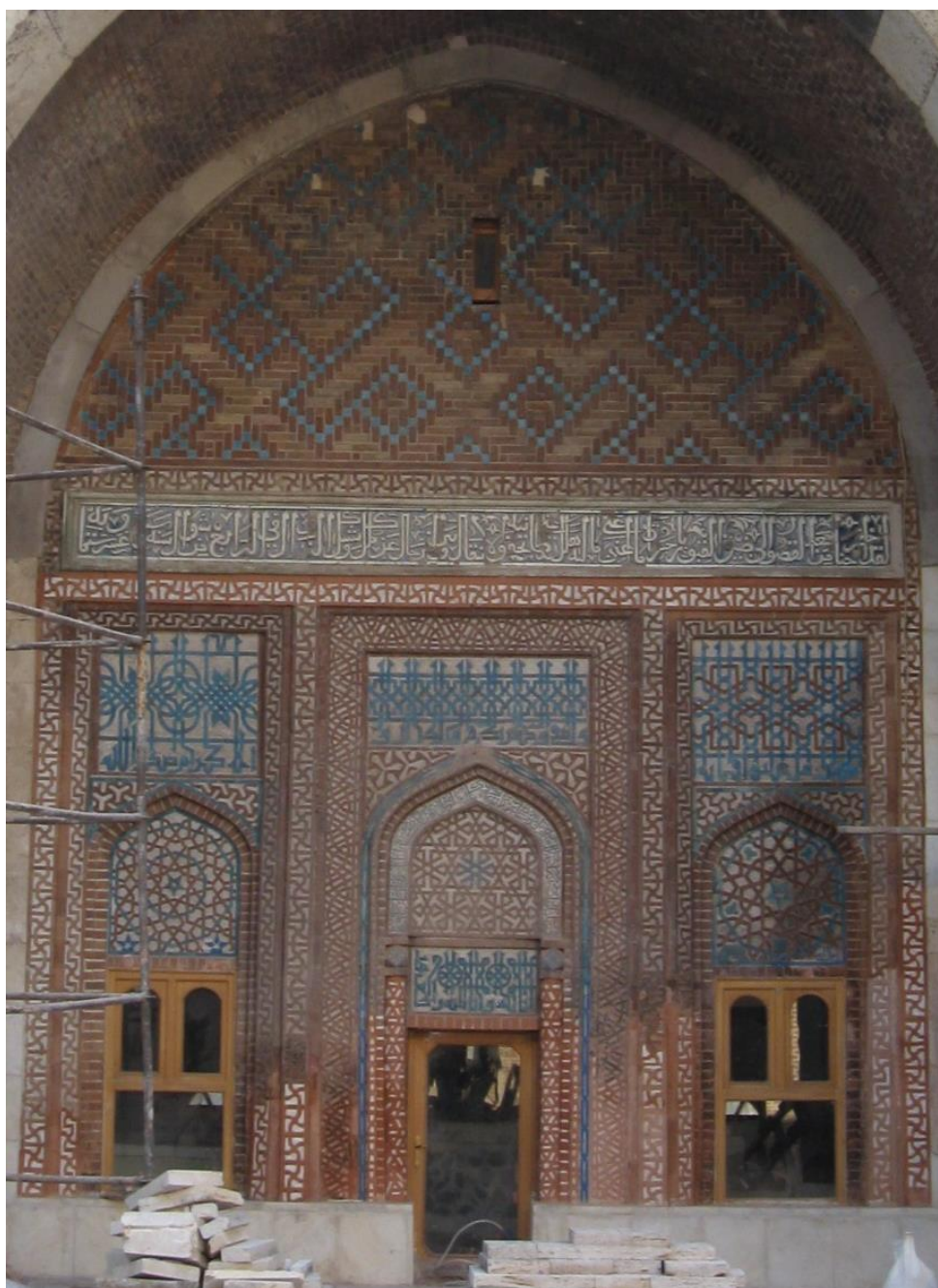


Fig. 4.62 – ‘Izz al-Dīn Kay Kāwūs I tomb, Sivas (617/1220); façade © R. McClary

Formal Sources

In typically Rūm Saljūq syncretic style, the tomb has a number of discernable affinities with earlier buildings. These can be divided into those which supply the form, and those which also appear to provide elements of the decorative vocabulary. There is a close formal relationship to the freestanding mausoleum of Fakhr al-Dīn Rāzī in Gurganj, Turkmenistan, built in 605/1208 (fig. 4.63).¹⁶⁹ The Sivas tomb has essentially the same form, but its insertion into an iwan creates the need for the tympanum between the top of the rectangular façade and the elevated drum. In both cases there is a tripartite façade with a band of cursive epigraphy along the top, and an elevated polygonal drum above (figs. 4.59, 4.62 and 4.63). It has been argued that the structure in Gurganj is the tomb of the Khwārazm Shāh Īl-Arslān (r.551-567/1156-1172) who, according to Barthold, was incontestably the most powerful ruler in the eastern part of the Muslim world at the time.¹⁷⁰ This argument is based, in part, on the fact that Fakhr al-Dīn Rāzī is buried in Gerata.¹⁷¹ The close similarity between what may be a royal tomb in the Khwārazm Shāh's capital and a royal tomb in the Rūm Saljūq commercial capital is unlikely to have been accidental, when the rivalry between the two powers for political supremacy in the post-Great Saljūq world is considered. Between 612/1215-16, when the Khwārazm Shāh gained effective control of both the Khurāsānian and core lands of the Ghūrids,¹⁷² and their conquest of the lands of the Ildegüzid *atābeg* dynasty in north-west Iran in 622/1225,¹⁷³ the Khwārazmian empire became the largest of the post-Saljūq empires, notwithstanding the Mongol capture of Transoxiana in 617/1220, which reduced it in size significantly.¹⁷⁴ At the same time the Rūm Saljūqs under 'Izz al-Dīn focused on economic expansion through the conquest of the ports of Sinop and Antalya, partly in an attempt to try and demonstrate that they were the rightful heirs to the Great Saljūqs. This was a projection of power through trade which was closer to the manner of Italian city states like Venice and Genoa, rather than the wholesale

¹⁶⁹ Hillenbrand (2011), p.290 states that the building is dated 605/1208, but does not cite any epigraphic evidence for the date.

¹⁷⁰ Barthold (1968), p.333.

¹⁷¹ Mamedov and Muradov (2001), p.45.

¹⁷² Jackson (2000), p.208.

¹⁷³ Bosworth (1996), p.199.

¹⁷⁴ *Ibid.*, p.180.

conquest of vast swathes of territory, as pursued by the Khwārazm Shāhs. The increased importance of Sivas as a trading hub in this period may well explain why it was chosen over Konya as the site for the major architectural legacy of ‘Izz al-Dīn.¹⁷⁵

The striking formal similarity between the two structures, and the lack of other similar surviving structures, indicates the possibility of the craftsman who signed the Sivas façade (Aḥmad ibn Abī Bakr al-Marandī) having visited Gurganj. Although the roof has glazed decoration, the decoration of the façade of the Gurganj tomb is different, being terracotta incised with vegetal patterns rather than glazed geometric patterns. The Sivas signature is located on two panels at the bottom corners of the blind arch panel above the west window of the tomb façade and is discussed in detail below.

¹⁷⁵ Dr Andrew Peacock (personal communication, 17/1/2015) suggests the ready acceptance of ‘Alā’ al-Dīn by the city of Konya after the death of ‘Izz al-Dīn may be indicative of a lack of support for ‘Izz al-Dīn in Konya. This may be another reason why he chose Sivas over Konya for the site of such a major building.

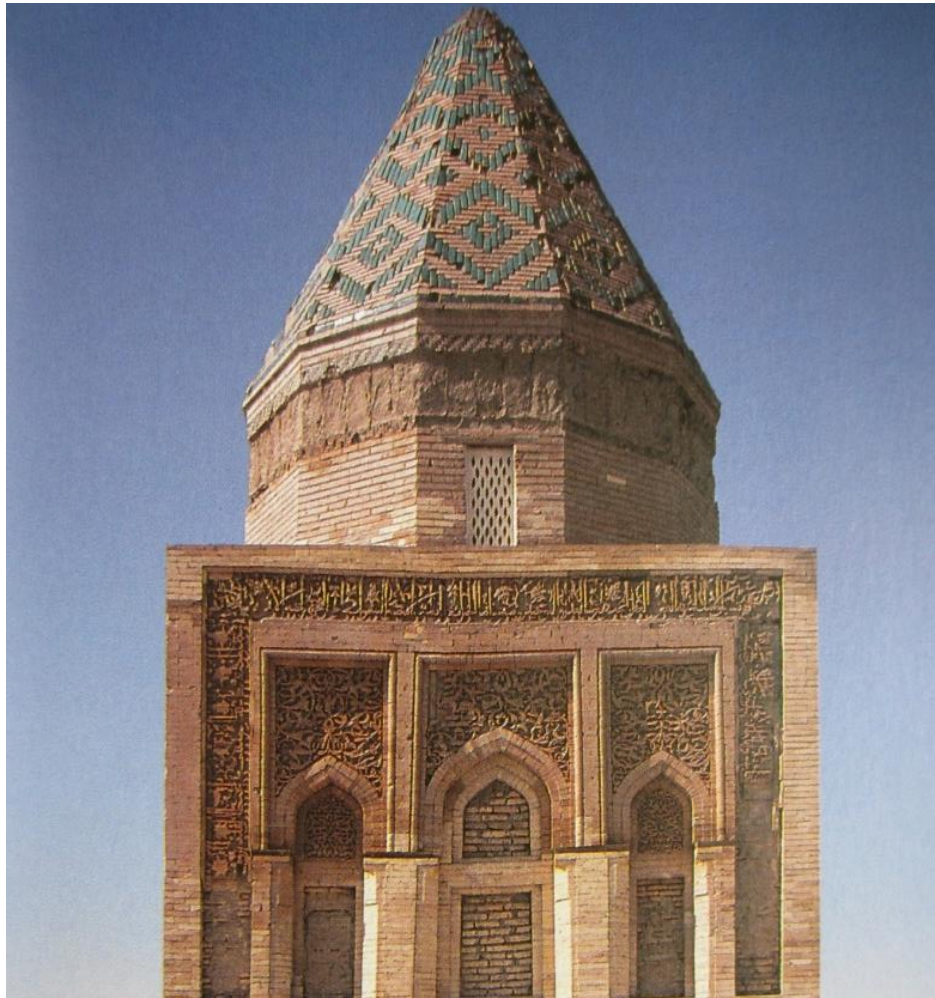


Fig. 4.63 – Fakhr al-Dīn Rāzī tomb, Urgench (after Hattstein and Delius (2000), p.361)

The *nisba* of Aḥmad, Marandī, indicates he was probably from the city of Marand in north-west Iran, about half-way between Nakhchivān and Marāgha.¹⁷⁶ These two cities feature tombs with very similar decoration to that found in Sivas. They are the Gunbad-i Kabūd in Marāgha (593/1196-7) and the Mu'mina Khātūn tomb in Nakhchivān City. Like the upper section of the Sivas tomb, they each have a decagonal form as well as featuring very similar glazed patterns. It appears that the architect cast a very wide stylistic net, as the tomb's form incorporated elements from Central Asia and north-west Iran, along with epigraphic styles previously employed in the Ghūrīd heartland of Herāt. The political will to claim the mantle of the Great Saljūqs may explain the diverse range of sources, from across the Persianate world, for the tomb of the sultan. The highly decorative and prestigious

¹⁷⁶ Snelders (2010), p.91 states that *nisba* may refer to a technique or style associated with a city, rather than necessarily indicating the place of birth or family origins.

nature of the structure, in addition to the way that the rest of the hospital interior appears to focus attention on (and be directed towards) the tomb, supports the argument that it was commissioned by 'Izz al-Dīn, even if it was not completed until after his death.

In regard to antecedent tombs in Anatolia, the closest in style, if not in form, is the brick Mengücek Gazi tomb in Kemah (c.587/1191).¹⁷⁷ In both cases the blind arch decoration is based on a similar six-foil pattern and the centre of the composition is coloured, with an inset bowl in Kemah and a glazed strapwork section in Sivas.¹⁷⁸ The bevel-cornered cube capitals atop the engaged brick columns are of the same kind, so although there are many differences in form and detail, it an interesting comparison, (figs. 4.62 and 4.64).



Fig. 4.64 – Mengücek Gazi tomb entrance, Kemah (c.586/1190) © R. McClary

¹⁷⁷ See chapter two, pp.99-108.

¹⁷⁸ Pancaroğlu (2013), pp.42-3 suggests that the bowl was used in Kemah due to the lack of availability of glazed brick and tiles there, unlike the coeval, and otherwise similar (if larger) Gunbad-i Kabūd in Marāgha, and the Mu'mina Khātūn tomb in Nakhchivān.

The interior floor area of the Sivas tomb measures 5.78m x 6.88m (fig. 4.59). The total height of the tomb is 17.7m giving it a north-south height-to-width ratio of 2.3:1.¹⁷⁹ It was the tallest tomb in Anatolia at the time and the only tomb of the period in Anatolia with which it may be compared, in terms of form and scale, is the somewhat smaller square-plan Melik Gazi tomb in Pınarbaşı (c. late 6th/12th century).¹⁸⁰

Façade

Crisp, consistently sized and well-made bricks were employed for the tomb façade while a less fine grade of brick was used for the general construction of the non-lithic portions of the tomb and hospital.¹⁸¹ The bevelled profile of the façade (fig. 4.60) can be found in the Kemah tomb as well as those in Marāgha and Nakhchivān. The central primacy of the tripartite entrance is a result of a slight attenuation, and greater degree of decoration of the area above the door, in contrast to that of the panels either side. The decoration in the flat arched panels above the windows consists of a ten-fold geometric composition (fig. 4.66) while the central panel over the door has a six-fold pattern. The central panel has a *cavetto* edge, and consists of a number of visual layers, with six T-shaped elements around the small six-pointed stars, the points of which are made up of kite-shapes along with the short sides of rectangles forming part of the stars (fig. 4.65).¹⁸² Unlike the flanking panels, the central one is further accented by a narrow band of cursive epigraphy around the edge. The intricate variations on a number of similar themes give the tomb façade the appearance of a musical composition in brick and glazed tiles.¹⁸³

¹⁷⁹ Önköl (1996), p.386 lists the size and ratio of the tomb.

¹⁸⁰ For more information on that structure see chapter two, pp.113-5; chapter three, pp.176 and 185-7; appendix 2.1; and Önköl (1996), pp.231-5.

¹⁸¹ The door jamb bricks measure 21cm x 5.5cm while those used for the inside of the tomb wall are c. 21.5cm to 22cm x 6cm with a crude shape, being neither as crisp nor as fine as the bricks used on the façade.

¹⁸² Broug (2013), p.102 describes the pattern, but incorrectly states that the points of the stars are made up of triangles. See appendix 4.2 for a drawing of the underlying geometric elements of the strapwork design.

¹⁸³ See Appendix 4.3 for a detailed analysis of the blind pointed-arch panels on the 'Izz al-Dīn tomb façade.



Fig. 4.65 – Blind panel above door of tomb façade © R. McClary



Fig. 4.66 – Panels above east (l) and west (r) window of tomb façade © R. McClary

Epigraphy



Fig. 4.67 – Craftsman's signature cartouches above the west window of the tomb façade (top) and the signature panel from the Kırk Kızlar tomb in Niksar (c.611-17/1215-20) (bottom) © R. McClary

At the bottom of the pointed-arch panel above the west window (figs. 4.66 and 4.67) are two cartouches¹⁸⁴ which, when read together, have been suggested by Mayer to state that the structure is the work of (‘amal) Aḥmad ibn [Abī] Bakr (?) al-Marandī (?).¹⁸⁵ Although this reading of each individual signature is forced, the combination of the two, and the stylistic similarity of the Kırk Kızlar tomb in Niksar and the ‘Izz al-Dīn tomb in Sivas, makes the composite reading of the name (given by both Mayer and Meinecke) the most plausible option.¹⁸⁶ The following gives readings of the two different signatures and the likely composite name of the craftsman:

عمل احمد بن بدل (?) المرندي (Sivas)

عمل احمد بن ابو بكر المد ... (Niksar)

¹⁸⁴ Hillenbrand (2000), p.182 mentions the prevalence of the practice of splitting artists signatures across multiple cartouches in Ghūrīd epigraphy and cites the Imam-i Khurd tomb at Sar-i Pul as an example.

¹⁸⁵ Reading as published by Mayer (1956), p.41. The *Bakr* (بكر) is based on the presence in the similar signature on the Kırk Kızlar tomb in Niksar. See chapter two for more details.

¹⁸⁶ Önkāl (1996), p.390 gives an alternative reading, the difference being the substitution of *Bedel* (بدل) for *Bakr* (بكر), while Çetintaş (1953), p.20 gives *Bizl* (بذل) for *Bakr* (بكر). The two alternatives do at least address the errant *lām* before al-Marandī, but neither mention the Kırk Kızlar tomb signature. The discrepancies and lacunae between the two versions remain problematic. The first section of the second cartouch is the least clear. Other possible readings of the name include; *n-d-l*, *b-d-l*, *y-d-l*, *n-dh-l*, *b-dh-l* and *y-d-l*. There is an unresolved disconnect between the signature and the rest of the glazed tile epigraphy in the Sivas complex.

The façade of the tomb features the widest array of epigraphic styles of the whole complex. There are nine separate panels of both Arabic and Persian epigraphy in square Kufic, tripartite knotted Kufic, plain Kufic and cursive script. The origin of tripartite epigraphy of the type seen on the tomb façade, as well as on a number of the Ildegüzid tombs in Marāgha and Nakhchivān, is to be found on the late 6th/12th and early 7th/13th century architecture of the Ghūrid empire in Khurāsān and Gharjistān. Numerous examples survive, including a turquoise glazed band on the portal of the Friday mosque in Herāt (1201 CE), and a baked brick band on the south entrance of the Shāh-i Mashhad in north-west Afghanistan (561/1165-6)¹⁸⁷ which, although very similar to the Sivas epigraphy, both feature rather more elaborate upper registers with vegetal additions. The closest in style to the Sivas examples was the carved terracotta band on the interior of the portal of the tomb of Ghiyāth al-Dīn Muḥammad ibn Sām in Herāt (c.607/1210-11). This has simplified knotting and the addorsed spear-topped *hastae* in the upper register similar to the Sivas epigraphy.¹⁸⁸

The presence of craftsmen from Khurāsān may be assumed, judging by the style of the epigraphy, but there is no direct textual evidence. Although the importation of objects displaying such epigraphy is a possible means of transmission, despite the different method of execution,¹⁸⁹ the known presence of individuals from eastern Iran in Sivas (including Jalāl al-Dīn Rūmī) at the time of construction, makes the presence of craftsmen from that region much more likely.¹⁹⁰

Numerous characteristics of the content, as well as the style, of Ghūrid epigraphy can be found in the epigraphic programme of the tomb of ‘Izz al-Dīn. The prodigious use of Qur’ānic Arabic and Persian, applied in forms that permeate almost every aspect

¹⁸⁷ See Casimir and Glatzer (1971), fig.8. Dated by epigraphy, *ibid.*, p.56.

¹⁸⁸ See Hillenbrand (2002), p.134, fig.12.13, photographed by Byron. Unfortunately the structure no longer survives.

¹⁸⁹ Melikian Chirvani (1975), p.116 mentions a bowl from eastern Iran, with similar epigraphy to that found in Sivas, that is in the Etnografya Müzesi in Ankara, but the date of importation into Anatolia is unknown.

¹⁹⁰ Melikian states that Rūmī arrived from Balkh with his father in Malatya in 614/1217, and that by 616/1219 he was in Sivas (*ibid.*, p.115).

of the decoration, are to be found in both Sivas and the late 6th/12th century architecture of the Ghūrid empire.¹⁹¹

The tripartite¹⁹² epigraphic panel over the door of the tomb consists of glazed turquoise tiles on a white plaster background, with the last part of *āyā* 156 of *sūra* 2, *al-Baqara* (the Cow) that states:

إِنَّا لِلّٰهِ وَاِنَّا اِلَيْهِ رَاجِعُونَ

We belong to Allāh and to Him we shall return



Fig. 4.68 – ‘Izz al-Dīn tomb, Sivas; epigraphic panel above doorway © R. McClary

This is probably the most fitting text to inscribe on a tomb and is in keeping with the tone of the rest of the inscriptions on it. It is a quotation which would have been relevant to every reader, and involved them on a visceral level, forcing them to confront their ultimate fate. The final word turns and runs vertically, and the *hastae* are knotted together with *hastae* that are not related to any letter forms added for visual rhythm, along with two circular patterns forming the upper two-thirds of the composition.¹⁹³ At the beginning of the text a glazed element rather inexplicably extends through the brick border on the right (fig. 4.68). The tripartite epigraphy is a

¹⁹¹ See Hillenbrand (2000), pp.173-193 and p.202 for an overview of the content and techniques employed in both Ghaznavid and the Ghūrid epigraphy.

¹⁹² Blair (1985), p.85 describes the components as a lower register of Kufic letters, a middle register of interlace connecting half of each pair of verticals and a register of delicate split palmettes above.

¹⁹³ The panel measures 43.8 cm x 87.6cm (inside dimension) and 48.4cm x 93.5cm (outside dimension). It may well have been deliberate that the final word points up to heaven.

style developed in Ghūrid architecture, as is the decorative use of pseudo-*hastae* when the script does not provide them.¹⁹⁴ The blind pointed-arch panel above the door is delineated by a band of cursive epigraphy that is the only example of Persian on the tomb (figs. 4.65 and 4.69). The poem, in the Ramal metre (*fā'ilātun*), appears to read:¹⁹⁵

در جهان شاهان بسی بودند کز گردون ملک
تیر شان بر برف گسل بود و سنان جوزا نگار
بنگرید اکنون بنات نعلش بمو کز دست مرگ
نیزها شان شاخ شاخ و تیرها شان تار تار
الاعتبار

Dar jahān shāhān basī būdand k-az gardūn-i mulk
Tīr-i shān bar barf gusil būd wa sinān jauzā-nigār
Bingarīd aknūn Banāt-i Na'sh bi-mū, k-az¹⁹⁶ dast-i marg
Naiza-hā-shān shākh shākh wa tīr-hā-shān tār tār
al-i 'tibār!

*In this world were many powerful kings whose arrows tore through the mountain snows of this turning world and whose spearheads were as beautiful as the constellation of Gemini. Look now how the mournful constellations of the stars (Banāt-i Na'sh) are weeping, since through the power of death these monarchs' spears have become as crooked as ram's horns and their arrows as limp as unstrung bowstrings. Take heed!*¹⁹⁷

The meaning of the Persian poem may be related to the content of the Arabic inscription band across the top of the tomb (fig. 4.75) which expresses similar sentiments regarding the transitory nature of earthly power.



Fig. 4.69 – Persian verses over 'Izz al-Dīn tomb entrance door © R. McClary

¹⁹⁴ Casimir and Glatzer (1971), p.60.

¹⁹⁵ Çetintaş (1953), p.18 gives a poor transcription of the Persian. A more precise reading is given here. The poet and source of the poem are unknown.

¹⁹⁶ Assuming the repeat of *k-az* (کز) is an example of dittography on the part of the scribe.

¹⁹⁷ New translation by Bruce Wannell.

Unlike the rest of the inscriptions in the complex, the three tripartite knotted Kufic panels above the blind arches have different styles of knotting but form one continuous quote from the Qur'ān (figs. 4.70, 4.71 and 4.72). They display *āyāt* 26 – 27 of *sūra* 55, *al-Raḥmān* (the Merciful), along with a short phrase added on the end:

كل من عليها فان
ويبقى وجه ربك ذو الجلال و
الاکرام صدق الله

*Everyone on earth perishes, (26) all that remains is the Face of your Lord, full of majesty, bestowing honour (27).*¹⁹⁸ *Allāh spoke in truth.*

The choice of such a verse in this location is particularly fitting, and ties in with the funerary inscription in the long band above. In typically syncretic Rūm Saljūq style, the epigraphy on the tomb façade also introduces circles (figs. 4.68 and 4.72) to the otherwise rectilinear *alif* and *lām* knotting. This is a motif that appears to be employed first in the bands of unglazed Kufic epigraphy which run down the corners of the Ildegüzid Mu'mina Khātūn tomb (582/1186-7) in Nakhchivān (fig. 4.73).

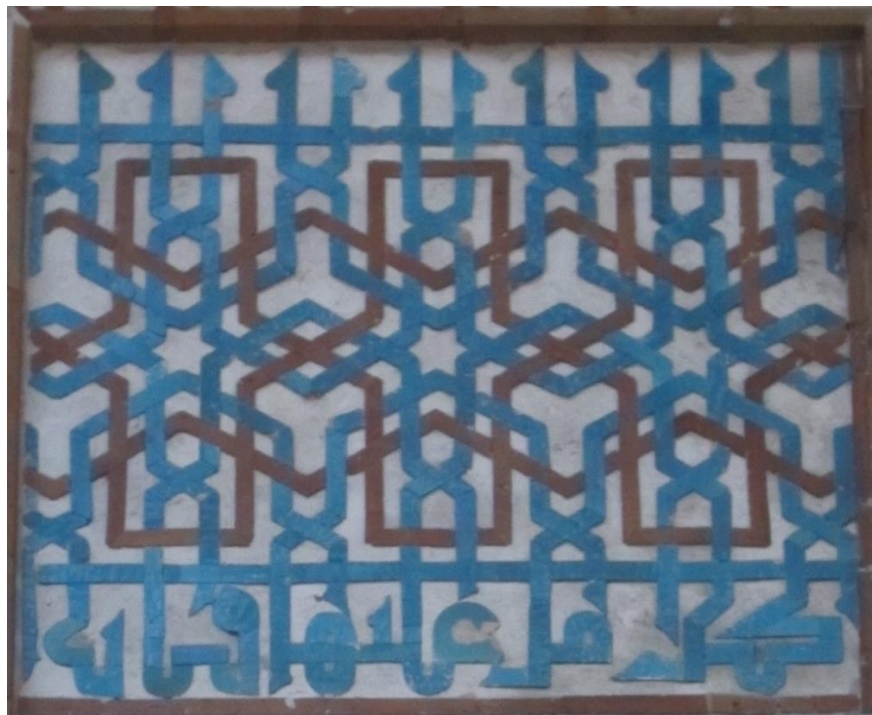


Fig. 4.70 – Epigraphic panel above the west window blind arch © R. McClary

¹⁹⁸ Bayat (2006), p.358 identifies the passage. The translation is from Abdel Haleem (2005), p.354.



Fig. 4.71 – Epigraphic panel above central blind arch © R. McClary

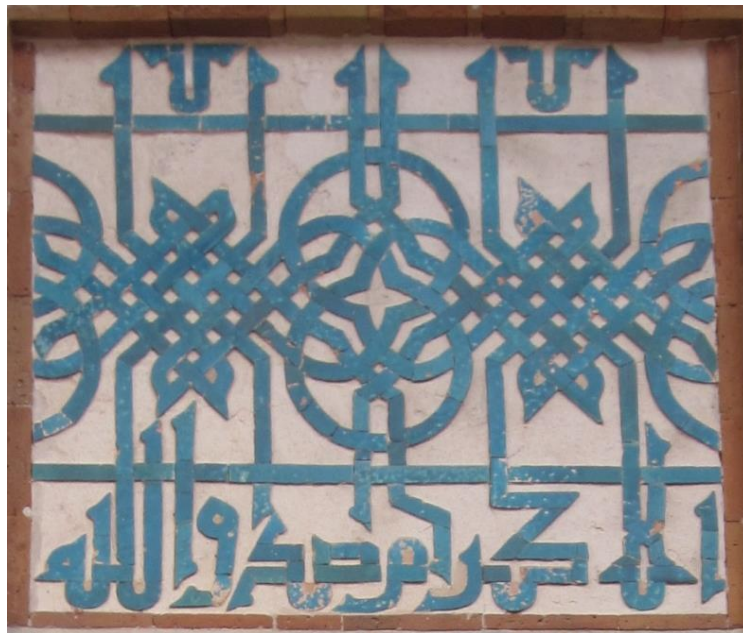


Fig. 4.72 – Epigraphic panel above the east window blind arch © R. McClary



Fig. 4.73 – Mu'mina Khātūn tomb, Nakhchiavān (582/1186-7); corner epigraphy detail
© R. McClary

There is another almost coeval example of tripartite knotted and elongated Kufic epigraphy in Sivas, in a band around the middle of the shaft of the nearby Great Mosque minaret, built seven years earlier (fig. 4.74).¹⁹⁹ Although the epigraphic band on the minaret is red brick on a white plaster background, rather than glazed, the patterns and the addorsed half-arrowhead treatment of the top of the *hastae* are very similar to that of the epigraphy of the tomb façade. This suggests a close connection between both the patron and the team of craftsmen involved in the production of the two structures.



Fig. 4.74 – Great Mosque minaret, Sivas (609/1212-13); epigraphic band (west face)
© R. McClary

Returning to the tomb, the funerary inscription in Arabic verse (fig. 4.75) is beautifully displayed in relief cursive white letters on a blue background²⁰⁰ below the tympanum. The upper section of the band is decorated with vegetal motifs filling the spaces between the letters. The inscription reads:²⁰¹

لقد أخرجنا من سعة القصور إلى ضيق القبور
يا حسرتا ما أغنى عني ماليه هلك عني سلطانيه
تحقق الانتقال وبين الترحال عن ملك وشيك الزوال
في الرابع من شوال سنة سبع عشر وستمائة

*Laqad ukhrijnā min sa‘at al-quṣūr ilā dīq al-qubūr yā ḥasratā mā aghnā
‘annī mālī halk ‘annī salṭanī taḥaqqaq al-intiqāl wa [ta] bayyan al-tarḥāl ‘an
mulk washīk al-zawāl fī al-rābi‘ min shawwāl sanat sab‘ ‘ashar wa sittimi’a*

“We have been expelled from the wide expanse of the palaces to the narrow confinement of the graves. Alas, my wealth has not helped me, my power has perished. Alas, removal has become a bitter reality, and all too clear my

¹⁹⁹ See chapter two, pp.126-145.

²⁰⁰ Although not in relief, the tiled inscription around the upper arch of the Kılıç Arslān II kiosk in Konya is an earlier sultanic example of white cursive text on a blue background.

²⁰¹ Corrected, from Combe, Sauvaget and Wiet (1939), p.172.

departure from this perishable world. On the 4th Shawwāl the year 617” [2nd December 1220]²⁰²



Fig. 4.75 – Funerary and date inscription below tympanum © R. McClary

Tympanum

The tympanum of the iwan arch above the tomb façade is strikingly decorated with large-scale square Kufic epigraphy, laid out diagonally, that repeats the name of the prophet Muḥammad. The lettering is composed of square turquoise glazed tiles surrounded by vertically set dark brown bricks, and the space between the letters is filled with horizontally set lighter-coloured bricks (fig. 4.76). Like many of the decorative elements of the complex, this technique was first used in Iran, on the minaret of Gar near Iṣfahān (515/1121-2).²⁰³ The most monumental antecedent example is the large area in the shallow east iwan inside the tomb of Ghiyāth al-Dīn Muḥammad ibn Sam, which was attached to the north side of the Friday mosque in Herāt in the early years of the 7th/13th century.²⁰⁴ Although the material is different, with the Herāt example incised into stucco, it is the scale, zig-zag edge and use in a tomb context that links the two. The general connections to Ghūrid epigraphic styles have already been noted above but it is the tomb of Ghiyāth al-Dīn in Herāt which had the largest number of similar epigraphic motifs, and is the closest in both chronology and function.²⁰⁵ The tympanum epigraphy is the earliest surviving example of its kind in Anatolia but was soon employed on another Rūm Saljūq structure. The shaft of the Kesik Minare in Aksaray, thought to date from the period shortly after the completion of the tomb,²⁰⁶ features the same style of square Kufic epigraphy, transferred from a flat plane onto the cylindrical form of a minaret shaft

²⁰² New translation, by Bruce Wannell. See also Redford (1991), p.71 and Meinecke (1976), p.431.

²⁰³ Hillenbrand (2002), p.140. Meinecke (1976), p.148 states that the square Kufic on the Gar minaret reads *al-mulk Allāh*.

²⁰⁴ Hillenbrand (2002), p.132. The tomb is thought to date from between 1210 – 1211 CE. It was demolished in the 1950s but a number of photographs survive.

²⁰⁵ The tomb also features zoomorphic *hastae* and tripartite knotted epigraphy. See Hillenbrand (2002), p.134, pl.12.14, p.137, pl.12.18 and p.140, pl.12.20.

²⁰⁶ Meinecke (1976), Vol. 2, p.10 dates the minaret to about 1220 CE. It is unlikely to pre-date the Sivas tomb. See appendix 2.10 for more details.

(fig. 4.77).²⁰⁷ Subsequently the same form of epigraphy was also applied to the shafts of the Çifte Minareli madrasa minarets, built immediately opposite the entrance of the hospital in 670/1271-2 (fig. 4.78). It appears to be the case, the small corpus notwithstanding, that a motif which seems first to have been used in Iran on a minaret shaft found its way into Anatolia through royal tomb architecture. From there it soon reverted to its initial use on minaret shafts.

The entire tomb façade is a *tour de force* of the tile cutter's art and is one of the finest examples of the form to survive anywhere in the wider Persianate world.



Fig. 4.76 – ‘Izz al-Dīn tomb; tympanum glazed Muḥammad (محمد) epigraphy © R. McClary

²⁰⁷ The epigraphy is of a slightly simpler nature, as the letters are not surrounded by vertically set bricks as seen in Sivas. The similarity between the two structures has been noted previously (*ibid.*, p.10).



Fig. 4.77 – Kesik Minare mosque minaret, Aksaray (c. early to mid-7th/13th c.) Fig. 4.78 – Çifte Minareli madrasa minaret, Sivas (670/1271-2)

Mihrāb

The *mihrāb*, which appears to be the main focus of this ostensibly secular building, has a shallow *cavetto* around a frame featuring interconnected eight-fold and twelve-fold patterns (figs. 4.80 and 4.81).²⁰⁸ The muqarnas hood has five tiers and is surrounded by a band of epigraphy. The rest of the decoration of the *mihrāb*, on the spandrels, in a panel above them, on the capitals and the engaged columns, consists of intricate vegetal decoration in a similar manner to the main portal of the hospital. Although there is a lamp painted in the centre of the *mihrāb*, it appears to be a later addition. Continuing the funerary theme, the band of cursive epigraphy that runs around the *mihrāb* arch (fig. 4.79) is *āyā* 18 of *sūra* 9, *al-Tawba* (repentance):

إنما يعمر مسجداً من الله من آمن بالله و اليوم الآخر و أقام الصلوة و عاتى
الزكوة ولم يخش إلا الله فعسى أولئك أن يكونوا الهمتهدين

The only ones who should tend God's places of worship are those who believe in God and the Last Day, who keep up the prayer, who pay the

²⁰⁸ The paint applied to the niche, frame and epigraphy of the *mihrāb* appears to be a much later, possibly nineteenth-century Ottoman, addition.

prescribed alms, and who fear no one but God: such people may hope to be among the rightly guided. ²⁰⁹

The use of a passage that makes such an overt reference to places of worship (الله مسجد / *masjid Allāh*) at the very epicentre of the building only adds to the religious nature of the complex. The only other decoration of the south wall of the tomb consists of two scallop-topped niches in the upper corners which are decorated with vegetal decoration (fig. 4.82). They appear to be Byzantine spolia, and have been modified to serve as small windows. It may be their *miḥrāb* niche-like form that led to their use in these particular locations, as there are no other examples of such forms in the rest of the complex.



Fig. 4.79 – ‘Izz al-Dīn tomb; *miḥrāb* epigraphy (*sūra* 9, *āyā* 18) © R. McClary

²⁰⁹ Bayat (2006), p.360 identifies the passage. The translation is from Abdel Haleem (2005), p.117.



Fig. 4.80 – ‘Izz al-Dīn tomb; *mihrāb* cross-section © R. McClary

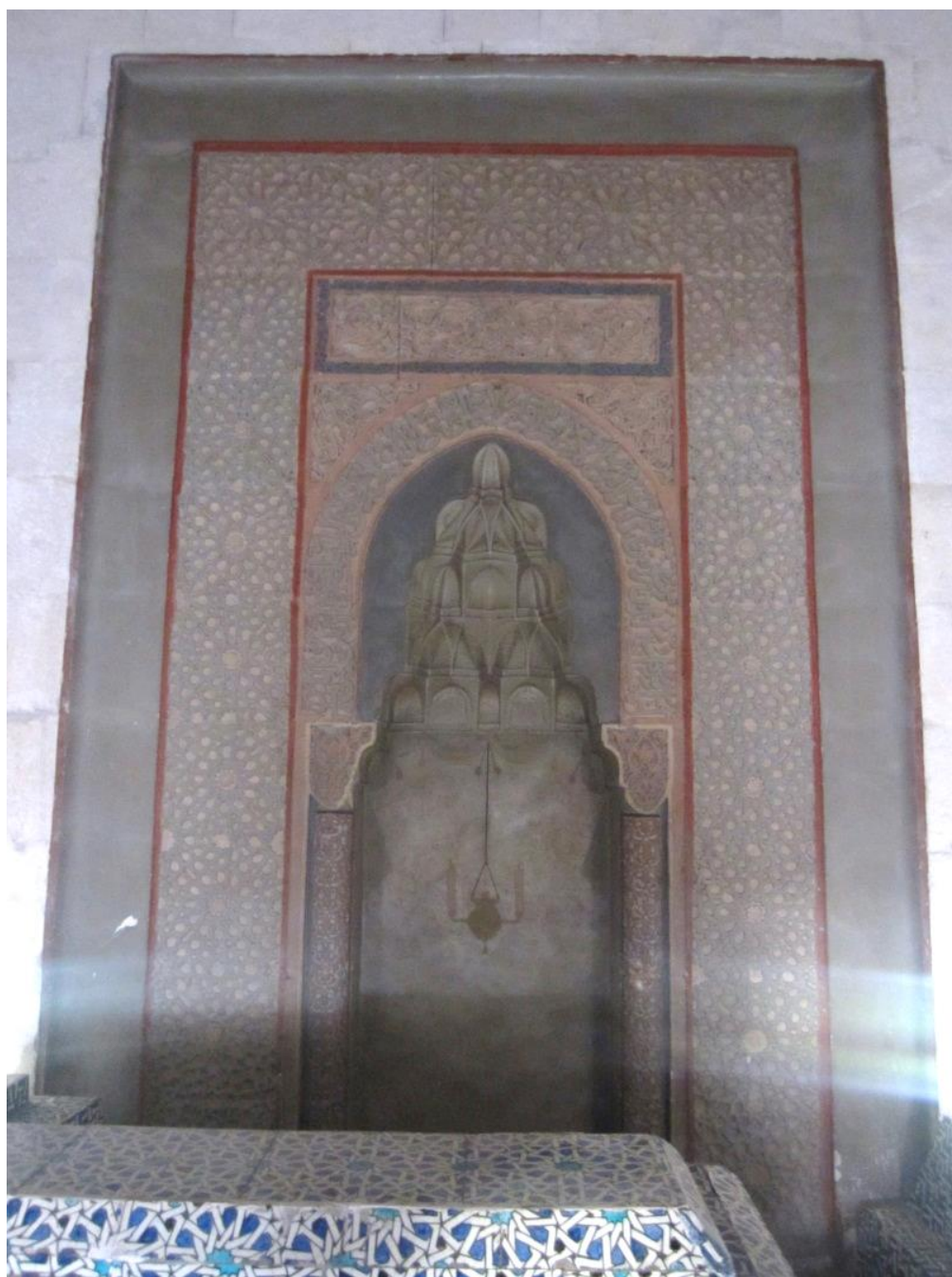


Fig. 4.81 – ‘Izz al-Dīn tomb *mihrāb* © R. McClary



Fig. 4.82 – Upper right scallop niche window in the south wall of the tomb © R. McClary

Drum

The ten blind outer arches of the drum rising above the tomb are decorated with an array of patterns. The north-to-south emphasis seen inside the hospital is preserved externally by the split of the decoration, with the western half featuring hooked cross and swastika patterns (fig. 4.83), while the eastern half has polygonal geometric patterns (fig. 4.84). The north facet, and the first panel to the east of the south facet, are the only two that feature any glazed elements, the rest of the patterns being made up solely of baked brick sections on a white plaster background.²¹⁰ The use of the two types of pattern connects the externally visible design of the drum with the internal decoration of the tomb façade which has swastika-style patterns in the frame borders, as well as an array of polygonal patterns on both the frames and the blind panels. The drum is the only brick part of the building that is visible externally and the only element which hints at the rather Persianate interior to the outside viewer. The elevated drum has a superficial similarity to the central raised element in Armenian churches but in brick instead of stone. However, the innately Persianate style of the tomb makes it more likely that the similarity is coincidental rather than deliberate. Although the tomb in the Çifte madrasa in Kayseri is elevated in a similar manner, it is smaller, stone, and not centrally aligned. This use of an elevated tomb drum is not commonly employed in later Anatolian architecture. The closest subsequent example is at the Gök madrasa in Amasya (c. 665/1266-7), which also has a brick drum over a stone structure, with polygonal patterns of a similar nature in the blind pointed arches of the facets.

²¹⁰ The facets were restored in 2011-12 but pre-restoration images show that the patterns remain the same. The only difference is the lack of any glazed elements in the panel to the east of the south facet now.



Fig. 4.83 – 'Izz al-Dīn tomb; south-west quadrant of drum © R. McClary



Fig. 4.84 – 'Izz al-Dīn tomb; south-east quadrant of drum © R. McClary

The Sivas drum has ten, rather than the usual eight sides seen in Rūm Saljūq tombs. The elevation projects the presence of the tomb much higher above the urban milieu than other examples in Anatolia. This gives it a sense of verticality that is closer to the more attenuated tomb towers of Iran, such as those found in Marāgha and Nakhchivān. It would have been the second tallest structure in the city after the Great Mosque minaret, probably ordered by 'Izz al-Dīn earlier in his reign, and which may also have been built by Aḥmad ibn Abī Bakr al-Marandī.²¹¹ The tomb would have been visible from outside the city and served as a counterpoint to the minaret. The roof was replaced in the 20th century, but the interior dome (which has also been repaired) has a hemispherical form. One of the most innovative aspects of the upper section of the tomb are the early surviving examples of 'Turkish triangles' instead of the squinches found in the Iranian antecedents, in order to transition from the square to the decagonal inner drum (fig. 4.85). This system of transitioning from a square to

²¹¹ See chapter two, pp.126-145.

a circle is not found in Iran, and is one of the few innovative techniques of brick construction developed in Anatolia during the early 7th/13th century. The stone walls of the tomb rise uninterrupted to the point where the brick zone of transition begins. Had the tomb been added to a pre-existing iwan, there would have been a pointed-arch vaulted roof that would have had to have been removed, rather than the arch with spandrels (fig. 4.87). Close inspection of the stonework does not support such a contention, adding further weight to the argument that the south iwan was designed, from the outset, to hold the drum of 'Izz al-Dīn's tomb.

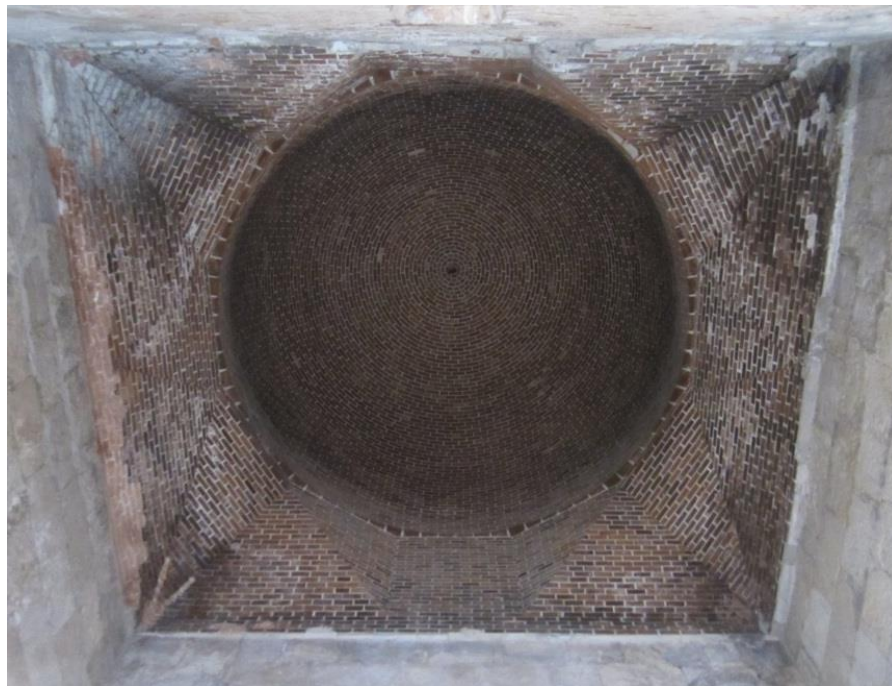


Fig. 4.85 – 'Izz al-Dīn tomb; dome and drum transition © R. McClary



Fig. 4.86 – 'Izz al-Dīn tomb; façade interior and drum transition © R. McClary

Crypt

It has been stated by Redford that the tomb of ‘Izz al-Dīn was the first Saljūq tomb not to have a crypt,²¹² but the replacement of the flagstones of the south *riwāq* in 2010 revealed that there is indeed a crypt, with a small opening immediately under the west window of the tomb façade (fig. 4.88). The small rectangular entrance is accessible through a removable panel, but there is nothing marking the site now that new flagstones have been laid. It is almost unthinkable that any Muslim tomb, particularly of a ruler, would have been constructed without a crypt, as it would have contradicted the doctrine of *taswiyat al-qubūr*, requiring evenness of the tomb with the surrounding ground.²¹³ The access passage runs south under the floor of the tomb, makes a right angle, and has three steps down into the chamber located immediately beneath the sarcophagus, which is decorated with underglaze geometric tiles. Most of the tiles are missing, but a few remain on the top which give a sense of the original overall appearance (fig. 4.87). The chamber has the shouldered arch roof form (fig. 4.89), also seen in the rooms of the north *riwāq*, and is 166cm from the floor to top of the shouldered arch vault.²¹⁴

²¹² Redford (1991), p.71.

²¹³ Daneshvari (1986), p.2. The body must be underground. The sarcophagi seen in tombs are symbolic, as they do not contain the remains of the deceased.

²¹⁴ The crypt was investigated and surveyed by the author during the restoration of the complex in December 2010.

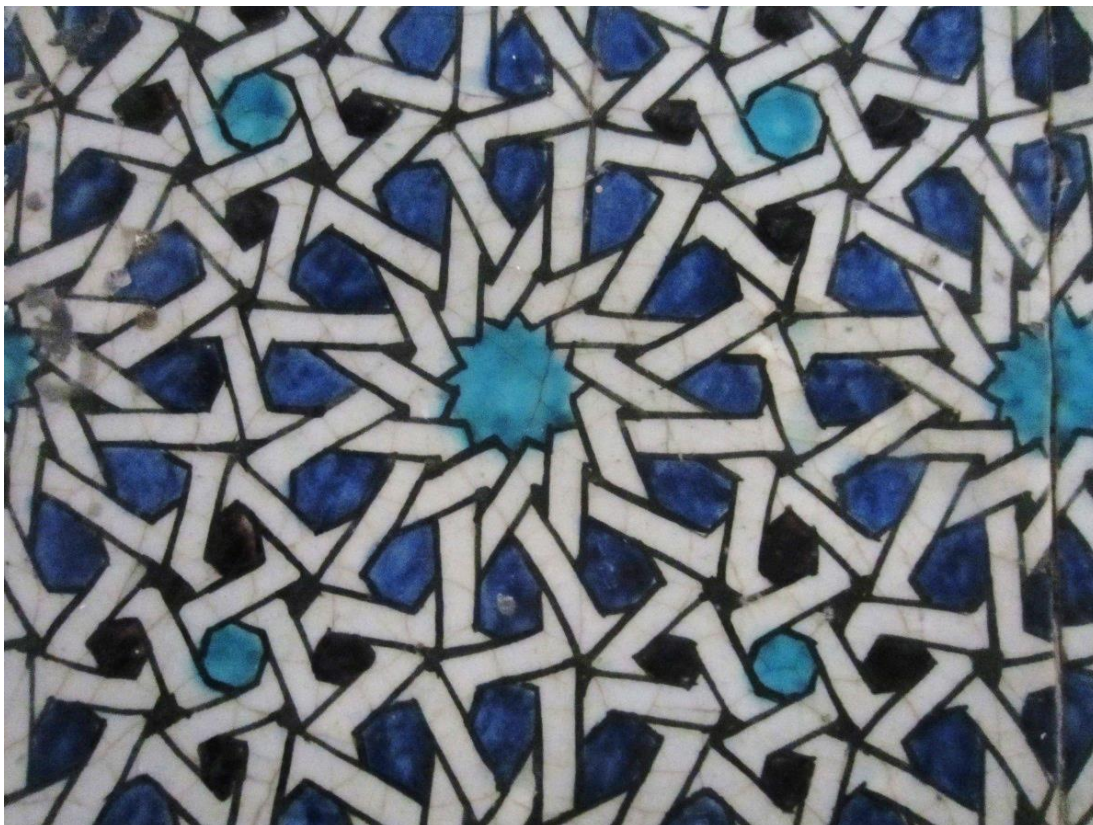


Fig. 4.87 – Glazed square tile on top of the sarcophagus of 'Izz al-Dīn © R. McClary



Fig. 4.88 – 'Izz al-Dīn tomb; crypt access (December 2010) © R. McClary



Fig. 4.89 – 'Izz al-Dīn tomb crypt (looking west) © R. McClary

Formal relationship to the hospital

Although the window openings and arch above the door have recently been filled in with bricks, the tripartite form of the tomb, with a central door flanked by windows, is employed in the rooms off the north *riwāq* (fig. 4.90). This detail integrates the form of the tomb into the visual aesthetic of the rest of the structure, while the tomb retained primacy as a result of its increased scale, level of decoration and central axial location. More importantly it is further evidence to support the point that the tomb was part of the original design schema of the complex, and not a later addition, as argued by Redford.²¹⁵ Another point that supports the view that the tomb was not a later addition is the lack of any sign that a stone vault was removed in order to add the upper section of the tomb. The entire internal focus of the structure, including the way the south *riwāq* arches rise up towards the central iwan containing the tomb, and the decorative north iwan with double doors opposite, all suggest that the iwan was designed to be the main focus of the complex, and to be the location of the tomb of ‘Izz al-Dīn.



Fig. 4.90 – Interior of room to the east of the north iwan © R. McClary

²¹⁵ Redford (1991), p.71. Basing himself on the difference between the date of death and the date on the tomb, coupled with the fact that previous Rūm Saljūq sultans were buried in Konya, Redford states that ‘Izz al-Dīn was banished, to what he describes as the provincial hospital, by his successor and brother ‘Alā’ al-Dīn.

Subsequent related structures

There appears to be only one subsequent tomb which adopts the tripartite entrance introduced to Anatolia in Sivas. The *amīr* Mubārīz al-Dīn Ertokuş had been the governor of Antalya from 603/1207 until 609/1212 when the city rebelled against Saljūq rule. Following the re-conquest of the city by ‘Izz al-Dīn in 612/1216 he was reappointed as governor,²¹⁶ and in 621/1224 the tomb and madrasa of Ertokuş was built north-east of Isparta (fig. 1.1).²¹⁷ Given the prestige associated with royal foundations, it is perhaps not surprising that the tripartite form in an iwan, if not the materials and decoration of the Sivas tomb entrance, was employed at the tomb of Ertokuş (fig. 4.91). In addition, there is a distinct possibility of the same craftsmen having worked on both structures, given the similarities between mason’s marks at both sites.

The triple-arched entrance, built in brick and stone, was rather awkwardly, but ultimately successfully, married to the standard octagonal form of the tomb attached to the rear (west) of the madrasa (fig. 4.92). In the case of the Ertokuş tomb all three openings are entrances, not just the central one. The tomb is constructed primarily of Byzantine spolia and, as in Sivas, the central pointed arch is slightly higher than the other two. The tomb does not contain a *mihrāb*, but there is one located to the left, in the wall at 90 degrees to the tomb entrance. The added complexity involved in copying the form of the royal tomb entrance, in the context of an octagonal tomb structure, and the lack of any other subsequent tomb entrance of this kind points to the significance for this particular patron of referencing the tripartite form of ‘Izz al-Dīn’s tomb. This is despite it having been built during the reign of his successor ‘Alā’ al-Dīn Kay Qubādh, for whom Ertokuş was the *atābeg* to one of his sons.²¹⁸ It is most likely that Ertokuş saw the form of the royal tomb when he was in Sivas and

²¹⁶ Redford and Leiser (2008), pp.92-3. Ibn Bībī states that Ertokuş was general of the coasts (*amīr al-sawāhil*) and took 40 castles in the south of Rough Cilicia, on the Mediterranean coast across from Cyprus. See Yalman (2011), p.193.

²¹⁷ Located at Lat: 37° 57’ 05” N Lon: 030° 38’ 43” E.

²¹⁸ Faruqi (1997), p.689.

requested that the wide, flat, tripartite façade be incorporated into the more conventional octagonal form of his tomb.²¹⁹



Fig. 4.91 – Ertokuş tomb entrance, Isparta (621/1224) © R. McClary

²¹⁹ Faroqi states (without giving a source) that Mubārız al-Dīn Ertokuş built one of the bridges over the Kızıl İrmak in Sivas. It is most likely that he would have visited Sivas to see the bridge he paid for and would have seen the other two major monuments of the time, the hospital and the Great Mosque (*ibid.*, p.689).

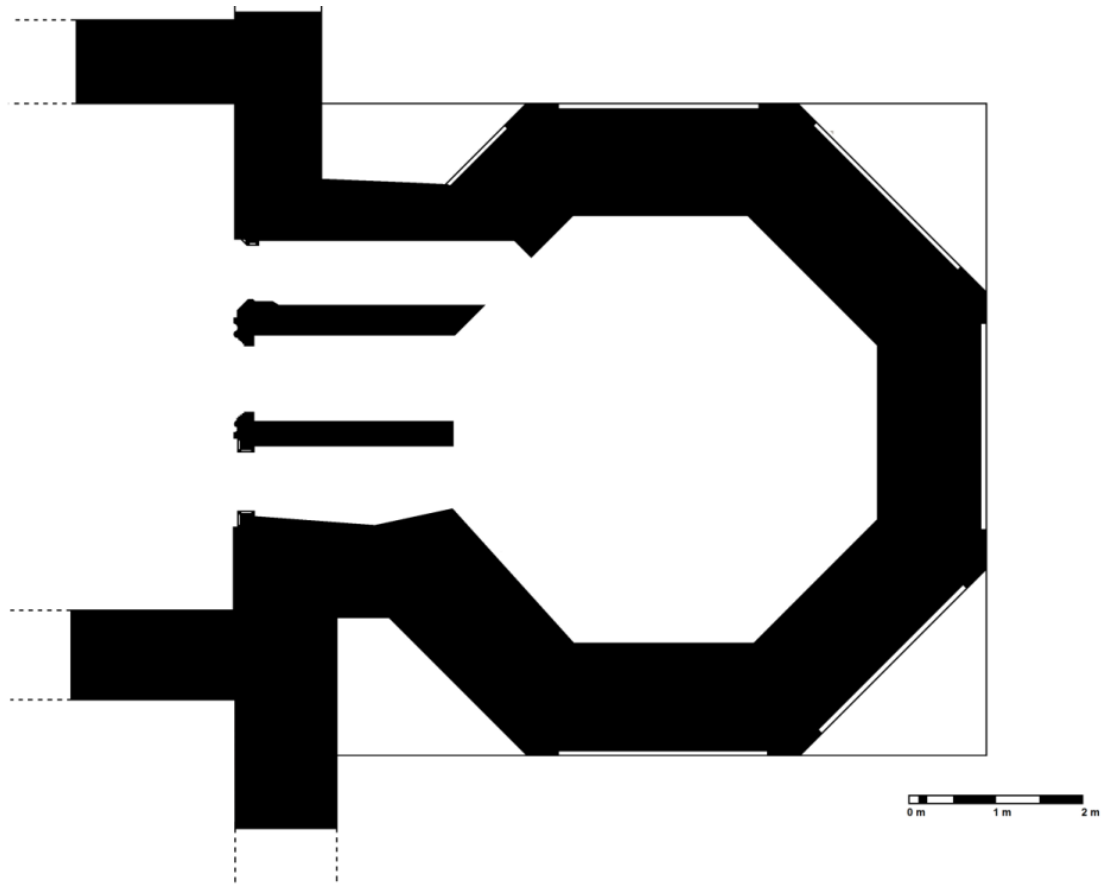


Fig. 4.92 – Ertokuş tomb ground plan © R. McClary

CONCLUSION

By re-examining the entire structure in detail it is now possible to argue that the complex was planned to house the tomb of ‘Izz al-Dīn from the start, in addition to being a pious and munificent endowment for the good of the population. It is now known that the tomb has a crypt. This reinterpretation of the planning of the building changes the understanding of how ‘Izz al-Dīn may have viewed the sultanate and his idea as to where its economic and political heart really lay. The reasons for the choice of Sivas, over Konya or Kayseri, for the construction of the tomb and hospital remain unclear, but the addition of the large minaret to the Great Mosque in Sivas may have been part of a larger plan for the redevelopment of the city. By choosing to be the first Rūm Saljūq sultan to be buried outside Konya, and making Sivas the site of his major architectural foundation, ‘Izz al-Dīn may be seen to have boosted the prestige of a major trading city which was located closer to the geographic centre of the sultanate. In addition, the threat to Konya by the Hospitallers’ occupation of Larende may have been a further motivation for the shift of emphasis to Sivas.²²⁰

The form and decoration of the tomb of ‘Izz al-Dīn is evidence of deep connections to the eastern Islamic lands of Khurāsān and Central Asia through the transhumance of craftsmen. It has an innovative and syncretic mix of Ghūrid epigraphic details, the basic form of a Khwārazm Shāh tomb in Gurganj, all combined with elements of the form and glazed decoration of the Ildegüzid funerary architecture at Marāgha and Nakhchivān. The use of solar and lunar anthropomorphic sculpture appears to blend pre-Islamic Turkish symbols with the *shahāda*, while the use of lions connects the structure, and by extension the patron, to a broader and ancient iconography of kingship. This symbolism would have been recognisable to almost everyone viewing the building, regardless of their cultural or religious background.

The defeat of the Ghūrids by the Khwārazm Shāh²²¹ in the period immediately preceding the construction of the hospital may well have led to the westward movement of craftsmen in search of work. The increasing wealth of the Anatolian

²²⁰ A point kindly suggested by Dr. Andrew Peacock (personal communication 18/1/2015)

²²¹ Bosworth (1996), p. 298 gives the date 612/1215.

Saljūqs could explain why workers travelled so far and introduced epigraphic motifs which were developed in Khurāsān.

It remains unclear whether the process of bringing together craftsmen with such a diverse range of skills and origins was the result of a conscious process of architectural synthesis, or a more haphazard result of the use of the best people who happened to be available at the time. Either way, whoever was responsible for the overall planning and execution of the hospital clearly allowed the individual craftsmen to exhibit their technical mastery of the various materials. It is unlikely, but by no means impossible, that ‘Izz al-Dīn had a great deal of personal input into the planning and decorative design of the complex yet, given the presence of so many *amīr*’s names on the walls of Sinop,²²² it is somewhat surprising that there is no indication on the structure as to who may have been in charge.

Although the hospital represents one of the last flowerings of decorative brick architecture in Anatolia, the tomb façade in particular paved the way for an increased use of decorative tiles across the various levels of architectural patronage. The extensive use of plaster incisions in the structure has never been contextualised or examined in any detail before, and their presence provides further evidence of the Persianate nature of both the structure, and the craftsmen who were responsible for elements of its construction. Likewise, the level and types of stone decoration went far beyond anything that had been seen before, blending patterns from the Georgian tradition with those previously used in Iran in brick. The forms, decoration and epigraphy employed in the hospital of ‘Izz al-Dīn Kay Kāwūs I represent the pinnacle of the synthesis of a new architectural aesthetic in Anatolia and the interweaving of a multiplicity of architectural traditions. These aspects all demonstrate that the Rūm Saljūq dynasty defined itself as Persian and Anatolian, as well as Turkish and Muslim.

²²² Redford (2012), pp.130-1. The inscriptions, dating to 612/1215, name 12 *amīrs*. Redford argues that the job of supervisor (Ar. *naẓar*, *tawallī*) of the works fell to two senior *amīrs* (*ibid.*, p.130).

CHAPTER V

Conclusion:

Patronage and Meaning

INTRODUCTION

The project of urban renewal, and the related infrastructure of roads and bridges undertaken by the Muslim rulers of Anatolia in the 6th/12th and 7th/13th centuries, was on a vast scale.¹ Relatively little survives, but there is enough to understand the scope of the redevelopment. As a result of extensive losses, the focus here has inevitably been on the monumental decorative structures, primarily religious in nature.² They had a continued relevance to society into the modern era, and as a result were maintained to a greater degree than other Rūm Saljūq buildings. In contrast, the vernacular residences, workshops, shops and markets fall primarily within the purview of archaeologists and have not formed part of this study.

Like many other dynasties before and after them, the Rūm Saljūqs employed monumental architecture in order to project an image of imperial power, and to reinforce the legitimacy of their rule. The construction of a number of the buildings fulfilled the expected roles of the ruler, and by extension the ruling elite, to secure the territory and support the economic development of the sultanate. The large-scale programme of architectural development was an integral part of a broader policy of economic renewal. The reasons for the construction of caravanserais and bridges cannot be understood without addressing the concomitant trade and tax concessions, as well as the peace treaties and marriage alliances.³ Similarly, the epigraphic *fath-nāma* on the walls in Antalya, and the foundation inscriptions of buildings such as the hospital of ‘Izz al-Dīn in Sivas, were likely to have been composed in the same *dīwān al-inshā’* (chancery) as surviving documents. These include the letters to Hugh I, the Lusignan king of Cyprus,⁴ the caliph al-Nāṣir li-Dīn Allāh,⁵ and the

¹ Redford (1993), p.155 states that there was rebuilding on a massive scale for the first time since antiquity.

² For a study of Saljūq patronage in the 7th/13th century see Crane (1993), pp.1-57, especially pp.1-24.

³ See chapter one, pp.8-27 for an overview of the treaties and marriage alliances between the various dynasties of the region.

⁴ Cahen (2001), p.50.

⁵ See Goshgarian (2013), p.230 for details of the request by ‘Izz al-Dīn for membership of the Caliphal *futuwwa*.

earlier *fath-nāma*, sent by Kılıç Arslān II to Michael the Syrian following the Battle of Myriokephalon.⁶

Architectural patronage from Kılıç Arslān II to Rukn al-Dīn

The full extent of the architectural patronage of Kılıç Arslān II remains unclear, as there are very few surviving structures which can be definitively attributed to his direct patronage. The two most significant examples are the remains of the palace kiosk in Konya and the Alay han near Aksaray. Kılıç Arslān II's role in the architectural redevelopment of the region lay more in his creation of regional hegemony, a state apparatus and an increasingly stable economic base upon which subsequent development was founded. Because of internecine strife following his division of the sultanate in 581/1185, there was a hiatus in architectural patronage.⁷ Limited redevelopment of infrastructure occurred during the rule of Rukn al-Dīn Sulaymān II (r.593-600/1197-1204), but he did build a bridge near Kayseri on the road to Kırşehir in 599/1202-3,⁸ and ordered repairs to the walls of Konya in 600/1203-4.⁹ However, it was not until the second rule of Ghiyāth al-Dīn, and increasingly so under that of his son 'Izz al-Dīn, that the process of building began in earnest on a scale which led to the emergence of an identifiable imperial aesthetic. It was under the rule of Kılıç Arslān II, Mecit argues, that the Rūm Saljūq polity may be considered to have become an empire rather than an emirate,¹⁰ and it was his rule which saw the beginning of a concerted campaign of architectural development. This process accelerated from the beginning of the 7th/13th century onward.

Architectural patronage under 'Izz al-Dīn

The examples of direct architectural patronage by 'Izz al-Dīn, and the structures patronised by members of the elite during his reign, suggest a more direct and

⁶ Redford and Leiser (2008), p.85.

⁷ For details of the division of the sultanate and the resultant instability in the region see chapter one, pp.18-20.

⁸ Rogers (1995), p.965.

⁹ *Ibid.*, p.967. In addition Mecit (2014), p.86 cites an inscription on the citadel at Niksar.

¹⁰ Mecit (2014), p.72. The use of the term empire is problematic in regard to its definition in the context of the region at the time. However, her point regarding the fundamental change in the character of the sultanate still stands.

overarching role for the sultan than was previously thought.¹¹ This process may be considered in the light of the recent reinterpretation regarding the changing role of the sultan towards a more absolute figure, in the mould of the ancient Persian kings, as proposed by Mecit.¹² It was during the reign of ‘Izz al-Dīn that the use of Persian epigraphy on buildings was introduced to Anatolia. The stone inscription on a section of the city walls of Sinop (612/1215), recording the work of the *amīr* of Malatya, includes a Persian poem celebrating the conquest.¹³ This appears to be the earliest example, and was closely followed by four inscriptions in the courtyard of the Sivas hospital of ‘Izz al-Dīn, and one glazed tile inscription on the tomb, located in the south iwan.¹⁴ These inscriptions are tangible evidence of the increasingly Persianate nature of the dynasty, even though the great majority of inscriptions continued to be in Arabic.¹⁵ In addition to the surviving structures, examined in the previous chapters, Ibn Bībī mentions that ‘Izz al-Dīn built a madrasa in Ankara, which was subsequently demolished by ‘Alā al-Dīn.¹⁶ The argument for a more direct role in the patronage and wider redevelopment of the sultanate is not to suggest that ‘Izz al-Dīn had a direct hand in the design, planning or even oversight of the construction process. The sultan and leading *amīrs* were travelling and campaigning for much of the time during which the weather would have been clement enough for construction.¹⁷ After ordering the walls of Sinop to be rebuilt ‘Izz al-Dīn left the city.¹⁸ It was the *amīrs*, rather than the sultan, who were responsible for the

¹¹ Rogers (1976), p.75 categorically states that “the role of the sultan as universal instigator may be completely ruled out.” In contrast Redford (1991), p.96 suggests, citing the addition of the marble portal and other changes to the mosque on the citadel in Konya, that ‘Izz al-Dīn’s plans to redevelop Konya may have been much on a far larger scale, but he died very soon after starting the redevelopment project.

¹² Mecit (2014), pp.108-9.

¹³ Redford (2010), p.134. On p.135 he states that the Arabic of the other inscriptions in Sinop contains Persianisms and mistakes which suggest that the scribes were Persians, and not native Arabic speakers.

¹⁴ See chapter four, pp.334-6 and 355-6 for more details of the content and location.

¹⁵ Blair (1998), p.23 states that the first datable inscription in Persian is from 1055-60 CE, at the tomb of Shāh Fazl at Safid Buland, in the north of the Farghāna valley in Kyrgyzstan. See *ibid.*, fig.2.7.

¹⁶ Yalman (2011), p.283.

¹⁷ See chapter one, pp.21-27 for a summary of the main military campaigns undertaken during the rule of ‘Izz al-Dīn.

¹⁸ Redford (2010), p.145. A small mosque bearing the sultan’s name was also constructed in the citadel at Sinop in the same year.

supervision of the reconstruction process.¹⁹ Ayaz, *al-ghālibī* under ‘Izz al-Dīn, is recognised as a key figure of architectural patronage during the reign of ‘Izz al-Dīn, and that of his successor ‘Alā al-Dīn, as a result of his work on the citadel mosque in Konya as well as the city walls of Sinop and Konya.²⁰ Redford’s detailed analysis of the content of inscriptions in Sinop led him to conclude that they give a sense of the nascent state organisation of the Rūm Saljūq sultanate at the beginning of the period of its greatest power, as well as demonstrating the rivalries between *amīrs* jockeying for power.²¹

It seems that the combination of external forces pushing craftsmen from Iran westward, and internal forces drawing them into Anatolia, resulted in the capacity to produce Persianate architecture just at the time when there was the political desire in the Rūm Saljūq sultanate for a more Perso-Islamic outlook. At the same time a more organic process was under way, as indigenous stone masons began to adopt Persian forms and decorations, and translate them into stone. In addition, the presence of Syrian stonemasons makes the reasons why a unique aesthetic flowered under ‘Izz al-Dīn more clear. The architectural patronage of ‘Izz al-Dīn included the conspicuous employment of one particular Ayyūbid-inspired element, yet rejected their overall aesthetic. Yalman states that ‘Izz al-Dīn Kay Kāwūs was the visionary who transformed the Konya compound from *masjid* to *jāmi‘*, and that the addition of the portal transformed the mosque and made it imperial.²² In addition, there were strong references to Iran and the Great Saljūq heritage, especially in Sivas. These elements were executed by craftsmen from a wide geographic area. They contributed to the emergence of a new architectural aesthetic that suggests a universalist approach by ‘Izz al-Dīn.

¹⁹ *Ibid.*, p.130-1.

²⁰ For more details on Ayaz see Yalman (2011), pp.211-214.

²¹ *Ibid.*, p.146.

²² Yalman (2011), p.277.

Royal female patronage

In addition to the patronage of sultans and *amīrs*, there was a long tradition of royal and elite female patronage of architecture and infrastructure,²³ from the early days of Islam onwards,²⁴ as well as in the contemporary Byzantine empire. Regarding the Rūm Saljūq examples, it is likely that the Byzantine tradition was the most influential, as so many of the royal women at the Saljūq court were Greek princesses.²⁵ There was a well-established tradition of female patronage of hospitals and monasteries, both as displays of power and as expressions of piety, in the Byzantine empire.²⁶ It would be difficult to overestimate the impact of several generations of Greek women at the harem, and Shukurov has argued that they would inevitably have affected the cultural experience.²⁷ Consequently, it is not surprising to find that the most substantial surviving example of female patronage from the period of study is the hospital and tomb complex of Gevher Nesībe in Kayseri (602/1205-6).²⁸ She was the daughter of Kılıç Arslān II, and the building is commonly referred to as the Çifte (paired) madrasa.²⁹ The decision to sponsor this type of building may well have been a continuation of established Byzantine practice.³⁰ The innovative inclusion of a tomb in the complex, which was not part of the Byzantine tradition, was subsequently seen at the hospital built for ‘Izz al-Dīn in Sivas. The contemporary women of the Ayyūbid court in Damascus were responsible

²³ For a study of examples from Anatolia in the 7th/13th century see Crane (1993), pp.11-12. He states the female patronage was limited to commemorative or pious structures (*ibid.*, p.11).

²⁴ A significant early example is the *darb Zubayda*, the water supply network along the pilgrimage route to Mecca, built by Harūn al-Rashīd's wife Zubayda (d.281/831-2). Tabbaa (1997), pp.27-28 makes the rather surprising claim that patronage by women was a relatively rare phenomenon in Islamic architecture.

²⁵ Beihammer (2011), p.600 notes that many of the sultans were born of Greek women. The translation of Niketas Choniātēs in Magoulias (1984), p.343 gives details of the marriage of Ghiyāth al-Dīn to the daughter of the Byzantine courtier Manuel Mavrozomēs. In addition, there were also Armenian and Georgian women at the court.

²⁶ Cortese and Calderini (2006), p.165. The patterns of patronage were similar to those by the contemporary royal women of the Fāṭimid court. See *ibid.*, pp.163-179 for details of the female patronage of architecture in the Fāṭimid context.

²⁷ Shukurov (2013), p.126. The Greek women of the court had at their disposal the priests and churches that were necessary to retain their Christian culture.

²⁸ Crane (1993), p.12 states that Gevher Nesībe was also the patron of a mosque in Uluborlu.

²⁹ Önköl (1996), p.379. See *ibid.*, pp.379-382 for more details of the tomb and its epigraphy.

³⁰ The tradition of monumental royal female patronage in Kayseri continued, as Huand Khātūn subsequently built a madrasa, mosque, tomb and hamam complex east of the citadel in 635/1237-8. See Akurgal (1980), p.71 for a plan of the complex.

for building a number of madrasas, many of which also included a tomb.³¹ The location chosen for the structure may also be significant, as it has been argued by Arık that, under Rūm Saljūq rule, Kayseri was as important as Konya, and acted as a second capital.³² In addition to the possible connection to Byzantine modes of female patronage, it is worth noting, especially given the strongly Persianate nature of the dynasty, that there was also a long tradition of female architectural patronage in the east of the *dār al-Islām*.³³ The large³⁴ Shāh-i Mashhad, a madrasa in the north-west of Afghanistan, is known, from epigraphy, to have been endowed by a senior woman of the Ghūrid court in 561/1165-6.³⁵ Possibly the earliest surviving example of female patronage in Anatolia is the Saltuqid tomb and enclosure of Mama Khātūn in Tercan, thought to date from the early years of the 7th/13th century (figs. 2.5 and 2.6).³⁶ It was not only new foundations which were funded by women. The Dānishmendid Külük mosque in Kayseri was restored, and a new muqarnas hood portal was added, in 607/1210-11 (fig. 2.9). The portal bears an inscription which states that the mosque was restored by a woman named Elti Ma'mūn bint Maḥmūd ibn Yağıbasan.³⁷ Across the region, it appears that women were restricted to the construction and repair of religious, funerary and charitable structures, as there are no recorded examples of any defensive structures having been funded by women. Like buildings patronised by men (which formed the great majority of foundations), buildings with female patrons functioned on two levels. They made a statement about the wealth and piety of the individual, as well as about the dynasty as a whole.³⁸ This

³¹ Humphreys (1994), p.37 states that of the fifteen madrasas with female patrons in Damascus, seven contained tombs for the founder. *Ibid.*, p.35 notes that the only madrasa in Aleppo which had a female patron is the al-Firdaws madrasa. It is the most impressive madrasa in the city and was built by Dayfa Khātūn, daughter of sultan al-ʿĀdil Abū Bakr (r.1200-1218 CE) and wife of Ṣāḥir Ghāzī, the prince of Aleppo (r.1186-1216 CE).

³² Arık, R. (2008), p.253. The evidence for this claim remains unclear.

³³ See Lambton (1988), pp.258-276. She states (p.259) that the chief wives of the Great Saljūq sultans had their own *iqṭāʿ*'s and landed estates, and spent considerable sums on charitable benefactions, which may be assumed to have included architectural patronage.

³⁴ Hillenbrand (2000), p.134 states that the building measures 44m x 41m. Much of the building is lost, but it appears originally to have been a four-iwan structure.

³⁵ Casimir and Glatzer (1971), p.56. The inscription is too damaged to determine the name of the patron.

³⁶ See chapter two, pp.41-4 for details of the tomb.

³⁷ Yurdakul (1996), p.22.

³⁸ Cortese and Calderini (2006), p.164.

ability to create a public profile through building was particularly important for elite women, as the majority of them were probably hidden from view most of the time.³⁹

The iconography of power

The use of established symbols and motifs to create an iconography of power was not limited to the domain of the Rūm Saljūqs. The process was part of a regional continuum extending far back into the pre-Islamic past. One of the most universal motifs employed across the region was the lion, either single or in pairs. Lions can be seen on several royal buildings of the period within the Rūm Saljūq sultanate.⁴⁰ Brass lions are known to have been on the Artuqid Great Mosque doors in Cizre. In the same context were brass twinned dragons, which is a motif also used, on a much smaller scale, on coinage of the period (fig. 3.80). Entwined pairs of dragons occur on royal and caliphal structures across the region, although more so in the regions to the south. Variations of the dragon-slayer design, executed in stone, appear on the portal of the Aleppo citadel, the Bāb al-Mawṣil in al-ʿAmadiyya, and the Bāb al-Tilism (Talisman gate) in Baghdad. Arguably, the two marble portals in Konya feature abstracted variations of the same imagery. The Mengüjekid tomb at Kemah features eagles incised into the mortar rising joints either side of the portal. The eagle motif was used by the Byzantines, and subsequently employed on the city walls of Konya following their reconstruction under ʿAlāʾ al-Dīn.

As has been demonstrated in the preceding chapters, a close examination of the material remains of the structures reveals a great deal about how they were designed and constructed. It is far more difficult to address the (much more subjective) question as to why certain patterns and motifs came to be applied to a wide typology of buildings during the period of study, especially the ones which are not clearly identifiable as symbols of power.

³⁹ Tabbaa (1997), p.45. The women were not always confined to the court; he gives (p.44) the example of Saljūqah, the daughter of the Rūm Saljūq sultan Masʿūd, who, according to Ibn Jubayr, travelled from Konya to Mecca in 1184 CE.

⁴⁰ There were paired lions on the the palace kiosk in Konya and on the portal of the ʿIzz al-Dīn hospital in Sivas. A double-headed lion survives on the portal of the Alay han near Aksaray. A single lion can be seen on the portal of the Çifte madrasa in Kayseri and on the citadel gate at Kayseri. For the pair of lions on the gate at Sinop see Redford (2010), pp.130, 145 and 146, fig.10. On p.145 he describes the lions as the first datable works of Rūm Saljūq sculpture.

A large number of the rectilinear geometric designs executed in brick, stone and, increasingly from the early 7th/13th century, glazed tile, may be described as webs of patterns. The spider's web is referred to in the Qur'ān,⁴¹ but it is in the work of Persian poets writing during the period of study that a possible, if rather conjectural, explanation of the underlying meaning of some of the patterns applied to buildings may be found.⁴² The Persian poet 'Aṭṭār (d. c.617/1220) referred to the dual nature of the spider's web as something of a paradox. He suggested that it is a veil which reveals and manifests, yet also conceals God from the gaze of man.⁴³ In addition, Niẓāmī (d. c.605/1209) compared the spider's web to the pattern of the visible universe as displayed on an astrolabe. Barry goes on to argue that the reflection of such patterns onto architecture serves both to hide and to mirror the nature of creation.⁴⁴ Such comparisons with architectural decoration are very tenuous but, given the contemporaneous nature of the poetic references, they may provide at least a clue as to the underlying reasons why such patterns proliferated across the region during the period of study.⁴⁵

Conclusion

The examination of surviving structures, especially those primarily constructed of brick, has demonstrated the problems inherent in a Turko-nationalist approach to the study of Rūm Saljūq architecture. The wider cross-regional Persianate context, with Byzantine and Armenian decorative elements (as suggested in much of Sarre's work) makes a far more logical framework for enquiry.⁴⁶

There may well be some truth in Strzygowski's original assessment that the Saljūqs were carriers (*Träger*), rather than innovators.⁴⁷ They brought craftsmen trained in the Persianate tradition into Anatolia, a land with a rich lithic tradition, and commissioned a large number of structures. The resultant aesthetic, which emerged

⁴¹ *Sūrā* 29 *ayā* 41 compares seeking the protection of anyone other than God with the weakness of the spiders web.

⁴² Barry (1996), p.41.

⁴³ *Ibid.*

⁴⁴ *Ibid.*

⁴⁵ Yalman (2012), pp.172-3 suggests that the stellate geometric patterns may have had an association with cosmology and light symbolism.

⁴⁶ Blessing (2014)a, p.19. For an English summary of Sarre's published views on Rūm Saljūq architecture, especially in Konya, see *ibid.*, pp.15-17.

⁴⁷ Strzygowski (1917), p.299.

from the hands of the indigenous and immigrant craftsmen, became the unique and identifiable architectural style elucidated in the preceding chapters. It was the Rūm Saljūqs, more than any other Turko-Muslim dynasty in Anatolia, which made the transition from rudimentary presence to a fully-fledged urban Islamic society.⁴⁸ The most long-lasting testaments to that process are the surviving structures. Through them it is possible to trace the development of an increasingly sophisticated and unified style, one that reflects the changing nature of the society which produced them. The urban and commercial fabric of society was commissioned, for the most part, by members of the courtly elite. However, the buildings were the direct result of the physical labour of a portion of the general population, and they remain among the few documents of their existence. Ultimately, through taxation, it was the population at large which provided much of the funding for the construction of the buildings.⁴⁹

There was not a Muslim majority in most of Anatolia during the period of study,⁵⁰ but as people converted and Muslims immigrated, Islamisation of the region gradually occurred. This process can be seen through the introduction, and increased proliferation, of a clearly Islamic and distinctively Anatolian style of architecture by the second decade of the 7th/13th century. A distinctive break from the local past, combined with a link to the recent past of Iran, created a permanent and Islamic identity for the Rūm Saljūq dynasty.

Understanding the process of political domination and geographic expansion is central to comprehending the pattern of architectural development. These are the reasons for the detailed study of the political background of the wider region in the first chapter. The examination of decorative elements of the corpus has analysis of one of the earliest surviving structures, the Kılıç Arslān II kiosk in Konya (561/1174), running through it. In the subsequent two decades there was something of a hiatus in construction in the lands ruled by the Rūm Saljūqs. During that period, it was the Mengüjekid rulers of Kemah and Divriği who were responsible for the

⁴⁸ Hillenbrand (2007), p.188.

⁴⁹ Vryonis (1971), p.183 claims that in the second half of the 7th/13th century the single largest source of revenue was the *jizya* paid by the *dhimmī* Christian population. Pancaroğlu (2013), pp.53-4 states that it was from international trade and travel that the state derived significant portions of its revenue.

⁵⁰ Dadoyan (2013), p.147 states that the population of eastern Anatolia was overwhelmingly Armenian, while that of the west was Greek.

construction of a number of important and innovative structures. These include the citadel mosque and the Sitte Melik tomb in Divriği, along with the Mengücek Gazi tomb in Kemah. The Kemah tomb, in particular, demonstrates the close connection between Anatolia and the Ildegüzid funerary architecture of Nakhchivān and Marāgha. The reassertion of Rūm Saljūq hegemony by the end of the 6th/12th century, under Rukn al-Dīn, led to a rapid increase in the scale of architectural development in the region. Under his successors, Ghiyāth al-Dīn and ‘Izz al-Dīn, there was a marked increase in the use of glazed tile decoration on brick structures, along with the proliferation of stereotomic stone muqarnas compositions. This motif was most commonly employed in hoods over the doorway in high *pīshṭāq* portals. It was the muqarnas hood in particular that came to be associated with the Rūm Saljūq sultanate. During the first two decades of the 7th/13th century there was a marked increase in the variety and complexity of geometric patterns employed around portals, along with the number of facets and engaged columns. There was also a change from patterns being carved in relief, as they were at the Çifte madrasa (602/1205-6) in Kayseri, to intaglio. In addition, there was a V-shaped groove cut into the surface of the strapwork, in order to further animate the geometric composition. The newly developed style of portal imparted an increasingly unified aesthetic to a wide typological array of structures. This resulted in the creation of a sultanate-wide form of structural decoration. It was but one part of a wider process of establishing a strong, stable and secure unified political entity, albeit one with a degree of autonomy among the various regional *amīrs* and Rūm Saljūq family members.

The lack of a surviving treatise, or other textual evidence, concerning the construction process, means that a detailed analysis of the constituent materials is the only way to generate a deeper understanding of working methods and the processes involved in the construction of the buildings of the period. The detailed examination of the buildings in this thesis has demonstrated that internal structural conservatism was masked by the innovative blending of forms and decorative techniques, from which a uniquely Rūm Saljūq architectural aesthetic emerged.⁵¹ This process resulted

⁵¹ Eastmond (2004), p.33 argues for the use of a regional term, such as Anatolian, rather than a culturally specific one, such as Saljūq. This is because of the increasingly widespread

in the construction, by the end of the period of study, of the largest structure erected in the region, the Evdir han, north of Antalya, as well as the most decorative portal and vertically elevated non-minaret structure, the ‘Izz al Dīn hospital and tomb in Sivas. The Sivas hospital acts as a marker for the end of the beginning in regard to the development of a new and identifiable aesthetic. The detailed analysis of this widely published, but still poorly understood, structure re-evaluates the previous scholarly notions of the intentions of the patron. It was the major foundation of ‘Izz al Dīn's rule, in the commercial capital, located near the geographic heart of the sultanate (fig. 1.1). The structural and decorative analysis of the building shows that the incorporation of the tomb into the complex was part of the original design schema, rather than a *post mortem* addition by the new sultan, ‘Alā’ al-Dīn. Close analysis of the hospital, and its constituent materials, has led to a better understanding of the numbers and types of craftsmen involved in the construction process. Decorative elements of the complex, and of the nearby minaret of the Sivas Great Mosque, strongly suggest the presence of craftsmen from Khurāsān. In particular, there are epigraphic techniques present that had been developed in the architecture of the Ghūrids and earlier Central Asian Muslim dynasties.

The first two decades of the 7th/13th century saw the introduction and proliferation of tall brick minarets in the Persian manner, attached to Great Mosques in a number of the major cities of the sultanate. They consist of thin cylindrical shafts with glazed epigraphic decoration that broadcast a message of power and dominion through a combination of epigraphic content and physical form. The minarets imparted, and continue to impart, a strong Islamic character to the major urban centres, as well as into the surrounding countryside beyond. In a similar manner, the network of caravanserais expanded the scope, power, and image of the sultanate out into the landscape between the cities. The fortress-like appearance of these buildings created

use of a number of the patterns and motifs across the region on Georgian, Byzantine and Armenian structures throughout the 7th/13th and 8th/14th centuries. While the use of the term Saljūq should perhaps be avoided for specific motifs, the overall aesthetic under discussion here was largely synthesised through the construction of buildings under Rūm Saljūq patronage.

the physical security necessary for trade, and projected an image of a secure and stable polity.

A unique aesthetic was deployed in Konya, the political capital and seat of the sultanate during the rule of 'Izz al-Dīn. Instead of the Persianate style seen in Sivas, Konya has two structures, in prominent locations, which feature monumentalised and externalised versions of the bi-chrome stereotomic marble interlace *mihrāb* form developed in Ayyūbid Aleppo. The citadel mosque portal features the only surviving examples of elbow brackets in the Rūm Saljūq corpus. It is a motif that had been appropriated from the architectural tradition of the recently defeated Crusaders of Outremer. These marble portals marked the physical nexus of political power in the sultanate. Pancaroğlu has claimed that the portal on the north end of the citadel acted as a symbol of the dynasty,⁵² and the prominent location of the structure, towering over the city, appears to support such a view. The importance of the site is indicated by the fact that all the sultans after Mas'ūd engaged in reconstruction and rebuilding of the mosque on the Konya citadel.⁵³ In addition, there was a notable absence of the tall minarets that were added to the Great Mosques of the other major cities, such as Sivas, Akşehir and Kayseri in the early 7th/13th century, thus further marking out the capital as unique.

From the last third of the 6th/12th century onwards, funerary structures proliferated across the region. They drew on the tradition developed in Iran in the previous century,⁵⁴ combined in many cases, and especially in Kayseri, with the form and materials of the central elevated section of Georgian and Armenian churches. The combination of tradition, adaptation and innovation typified the processes that were under way in the architecture of the period. Although a few brick tombs were built, it was the octagonal-plan stone-built tombs that were the most prevalent, with an increasing level of decoration over time.

⁵² Pancaroğlu (2013), p.61.

⁵³ Crane (1994), p.7. For a study of the chronology of the mosque see Redford (1991), pp.54-74.

⁵⁴ For an overview of the Great Saljūq funerary architecture of Iran see Hillenbrand (1994), pp.273-294 and Pope (1981), Vol. VIII, pls. 334-357.

Much of the brick architecture of Anatolia which was built during the period of study formed the western terminus of a regional school of Persianate architecture. It is a style that was primarily associated with funerary architecture,⁵⁵ developed in the Ildegüzid-ruled lands of north-west Iran in the second half of the 6th/12th century. The earliest surviving examples are in Nakhchivān and Marāgha, but as the examination of the façade of the tomb of ‘Izz al-Dīn Kay Kāwūs I in Sivas has demonstrated, it is a regional style that extended at least as far west as Sivas and Kayseri. Arguably, it may be said also to include Aksaray, and even Akşehir, albeit in a rather debased form. The westernmost structures tend to be somewhat more crudely executed, with greater use of stone (particularly Byzantine spolia in Akşehir) alongside the brick and glazed tiles. Although stone was more prevalent, this thesis has shown that brick became a prestige building material during the period of study, used for a number of sultnaic structures.

Beginning this study with an historical overview and contextualisation allows for a more integrated and nuanced understanding of the corpus, and the society of which the buildings are the most tangible surviving reminders. The wider role of architecture, to project an image of imperial unity, extended across the functional role of any one individual structure. The primarily urban architectural development was but one facet of the process of Islamisation and political legitimisation of Turko-Muslim rule which was under way in Anatolia in the late 6th/12th and early 7th/13th centuries.

This thesis has demonstrated that the close analysis of structural and decorative details of what are, in several cases, quite well published structures, can provide a hitherto unknown level of understanding in regard to the intentions of the patrons and the working methods of the craftsmen. Focusing on the poorly examined details of buildings that span the chronological scope of the thesis, from the kiosk in Konya to the hospital in Sivas, and integrating them into a fresh approach to the contemporary written sources, has resulted in a new and deeper understanding of the political and architectural landscape of Anatolia during the late-12th and early-13th centuries.

⁵⁵ An exception would be the minaret attached to the *qibla* wall of the Great Mosque in Sivas.

As Pancaroğlu has so clearly elucidated,⁵⁶ the Turko-centric and formalist approach to the study of Islamic architecture in Anatolia has led to a rather blinkered view of the surviving buildings. By investigating the individual details of an array of structures, and placing the buildings into their wider cultural and societal context, this thesis has built on the work of scholars such as Yalman, Blessing and Redford. As a result, a more nuanced, detailed and non-nationalist understanding of the regions' architecture has emerged.

Further research and development

Having laid out the key elements of the corpus and examined the materials, context and wider role of architecture in society, it is now time to examine possible future developments related to the wider topic. There is a need for a greater degree of comparative cross-cultural and trans-geographical analysis in order to better understand the differences, similarities and possible relationships between the architecture of the south Caucasus, northern Mesopotamia, Anatolia, northern Iran and Central Asia. There is scope for increased inter-disciplinary collaboration, to further our understanding of the societies of Anatolia in the late 6th/12th and early 7th/13th centuries. Specialists in three-dimensional computer modelling may be able to provide a view of some of the structures prior to the accretions and losses over the centuries since they were built. Digital manipulation can illustrate the original appearance of some of the buildings, by reuniting images of the objects held in museums with the buildings from whence they came. Archaeologists can provide information about vernacular residential and commercial structures, which are virtually all lost above ground, and add to the understanding of the foundations and underground services of surviving structures, where possible. The work of osteoarchaeologists may be able to shine some light on the diet, health and origins of the population, many of whom were involved in the construction process. The ongoing work of historians working with the primary Byzantine, Saljūq, Armenian, Georgian, Ayyūbid and other contemporary sources can continue to be considered in the context of the surviving architecture. Doing so can only add to the understanding of the complex web of interactions within such diverse subject populations. In addition, further chemical analysis of architectural components, in conjunction with

⁵⁶ See Pancaroğlu (2007), pp.67-76.

geologists and dendrochronologists, should be able to establish the sources, and therefore the distances over which constituent materials were transported.

Architecture is the most visible, and in some cases still functioning, source for the study of the Rūm Saljūqs. Buildings can be used to understand how society took shape, functioned, traded and developed in the short period between the establishment of a relatively secure, stable and wealthy state, and its subsequent fracturing into a number of Beyliks, in the post-Köse Dağ period of Ilkhānid domination, after 641/1243. A large number of structures survive from the early period of the development of Islamic architecture in Anatolia, but only a relatively small selection have been examined closely in this work. There is still not an easily accessible and comprehensive gazetteer of the surviving structures and archaeological remains dating from the early period of Turko-Muslim domination of Anatolia until the coming of the Mongols.⁵⁷ A selection of structures not discussed in detail in the main body of the text is included in the appendices, and raw data for many more having been gathered. A great deal more work, both individual and collaborative, is required to bring such a gazetteer to fruition. It is important to continue the move away from the formalist paradigm⁵⁸ which came to characterise the study of Rūm Saljūq architecture during the 20th century. The above actions can form part of the ongoing attempts to further integrate the study of architecture into that of the broader region, in a non-denominational, poly-cultural and non-nationalist manner. Given a thaw in the political relationship between Iran and the west, and the security situation in Afghanistan, a close examination of a number of surviving structures within those countries could be very beneficial. Analysis of structures in Marāgha and Herāt, as well as further east in Gurganj and Uzgend, could result in a far better understanding of the complex networks of relationships between the various regions that are manifested in the surviving architecture of the 6th/12th and 7th/13th centuries.

⁵⁷ Sinclair's four volume survey of eastern Turkey, published between 1987 and 1990, covers a good number of the relevant structures, but the series is limited geographically and, as a result of covering a far wider chronological span, it is not able to deal with each structure in the requisite detail.

⁵⁸ Although chapter two of this work employs a formalist approach, it is a foundation for a wider understanding of the historical context and cultural milieu which is developed throughout this work.

Like most of the pre-modern era in the Islamic world, the period of study was a time of fluid and permeable borders, with mobile populations of scholars, craftsmen, elites and bureaucrats. The 6th/12th and 7th/13th centuries was a time when Turks fought for the Byzantines, while Byzantine elites and scribes lived and worked alongside Persian administrators and poets from Khurāsān. Workers in the construction trade were just one element of a far wider process of movement and interaction of people from different ethnic, linguistic and religious backgrounds. It is hardly any wonder that the disparate elements of such a rich and culturally diverse region were manifested in its architectural expression.

APPENDICES

Appendix 1.1 – Anatolian Great Mosques to c.617/1220¹

#	City	Date	Medium	Dome	Courtyard	Minaret	Orientation
0	Ani	1086-87	Stone	No	No	Attached	Lateral
1	Diyarbakır	1091	Stone	No	Yes	Attached, 1155	Lateral
2	Siirt	1129	Stone	Yes	No	Freestanding, c.7 th /13 th C.	Lateral
3	Kayseri	1140	Stone	Yes	Small central opening	Attached, c. 1 st ¼ 7 th /13 th C.	Longitudinal
4	Niksar	1145	Stone	Small	No	Attached, Ottoman	Longitudinal
5	Bitlis	1150-1	Stone	Small	No	Attached, Ottoman	Lateral
6	Cizre	1155	Stone	Yes	Yes	Freestanding	Lateral
7	Harput	1156-7	Brick and Stone	Small	Small central opening	Attached	Longitudinal
8	Silvan	1157	Stone	Yes	No	No	Lateral
9	Urfa	1170-5	Stone	Small	Yes	Freestanding	Lateral
10	Harran	c.1174	Stone	n/a	Yes	Freestanding	Lateral
11	Mardin	c.1176	Stone	Yes	Foreshortened	Freestanding	Lateral
12	Erzurum	c.1179	Stone	Yes	No	Attached, Ottoman	Lateral
13	Sivas	1196-7	Stone	No	Foreshortened	Attached, 1212-13	Lateral
14	Dunaysır	1204	Stone	Yes	Foreshortened	Freestanding x 2	Lateral
15	Akşehir	1213	Brick	Yes	No	Freestanding	Lateral



¹ Many of the earliest of the surviving Great Mosques are in the more Syrian-dominated south of the region that is rather imperfectly described as Anatolia, but they were at times under the control of Turko-Muslim dynasties. They are included as a guide to the state of Islamic architecture of the wider region prior to the period covered by this study. In addition to the buildings listed, there are the remains of a Great Mosque in Van, estimated to date from between 1100 and 1150 CE, and the 6th/12th century *minbar* in the Karamanid-era Great Mosque in Aksaray suggests the presence of an earlier building in that city which no longer survives.

Appendix 1.2 – Regional dynastic rulers²

Great Saljūq	Rūm Saljūq	İldegüzid	Mengüjekid	Dānīshmendid	Saltuqid	Artuqid	Zangid / Ayyūbid	Khawārazm Shāh	Byzantine
Greater Iran	Anatolia	North West Iran	Divriği and Erzincan/Kemah	Central Anatolia	Eastern Anatolia	South-east Anatolia	Syria	North-east Iran	Western Anatolia
Muhammad Alp Arslān (r.455-465 /1063-73)	Sulaymān (r.473-78 /1081-86)								Romanus IV Diogenes (r.1068-71)
Malik Shāh (r.465-85/ 1073-92)				Dānīshmend Ghāzī (d.497/1104)					
	Kılıç Arslān I (r.485-500 /1092-1107)								
	Mas'ūd I (r.510-51 /1116-56)	İldegiz (r. c.530-571 /1136-75)	Ishāq ibn Mengücek (r. before 512- c.536 /before 1118-c.1142)		Abu a l- Muẓaffar Ghāzī (r.c.518-526 /c.1124-32)				
Arslān Shāh (r.556-71 /1161-76)	Kılıç Arslān II (551-88 /1156-92)	Muhammad Pahlawān (r.571-82 /1175-86)	Dāwūd I ibn Ishāq (r. c.536-60 /c.1142-65) in Erzincan		Saltuq II (r.526-63 /1132-68)		Mahmūd Nūr al-Dīn (r.541-569/ 1147-74)	II Arslān (r.551-67 /1156-72)	Manuel Comnenus (r.1143-80)
			Bahrām Shāh (r.560-622 /1165-1225) in Erzincan				Shālāh al-Dīn (r.564-89 /1164-93)		Isaac II Angelus (r.1185-95)
			Sulaymān I (r. c.536-570 /1142-75) in Divriği	Malik Dhu'l-Nūn (r.567-70 /1172-74) 2 nd reign					Alexius III Angelus (r.1195-1203)
Toghril III (r.571-590 /1176-1194)	Ghiyāth al-Dīn (r.588-93 /1192-97) 1 st reign		Shāhānshāh (r.570-93 /1175-97) in Divriği		Muhammad (r. 563-87 /1168-91)			Tekish (r.567-96 /1172-1200)	Isaac II Angelus and Alexius IV (1203-04)
	Sulaymān II (r.593-600 /1197-1204)		Sulaymān II (r.c. 593-626/ c.1197-1229) in Divriği		Māmā Khātūn (r.587-97 /1191-1201)	Nāṣir al-Dīn Mahmūd (r. 597-619 /1201-22)	Al-Malik al-'Adil (r. 596-615 /1200-1218)	Muhammad (r.596-617 /1200-1220)	Alexius Murzuphlus (r.1204)
	Kılıç Arslān III (r.600-01 /1204-05)								Theodore Laskaris (1205-1222) in Nicaea
	Ghiyāth al-Dīn (r.601-08 /1205-11) 2 nd reign								
	'Izz al-Dīn Kay Kāwūs I (r.608-16 /1211-20)								

² Muslim rulers from Bosworth (1996), pp.70, 179, 185-186, 190, 194, 199, 213, 215, 217-218 and Byzantine rulers from Norwich (1998), p.386. The regions were much more fractured than the table suggests, due in part to the Turkic practice of dividing lands among numerous sons, and the confederate nature of the Ayyūbids. The purpose of the table is to give an overview of the political context in which the buildings that are examined in the thesis were constructed. Only rulers referenced in the text are included.

Appendix 2.1: Melik Gazi tomb, Pinarbaşı

Location: Lat: 39° 46' 40" N Lon: 040° 23' 11" E

Date: c. late 6th/12th century

Documented: September 2013

Builder: Anonymous

Structure: Free standing square tomb with crypt.

Medium: Brick upper and roof, stone foundations

Brick: The Melik Gazi tomb in Pinarbaşı is an example of a brick-built square tomb with an eight-sided drum enclosing an internal dome on squinches (figs. 2.1.1 and 2.1.2). Judging by the style and the date of related structures in Iran it is unlikely that it was built any earlier than the last quarter of the 6th/12th century, and Önköl has attributed it, on stylistic grounds, to the end of the century.³ Like the tomb of 'Izz al-Dīn Kay Kāwūs I in Sivas (617/1220), which also has a square body and polygonal upper section,⁴ the Pinarbaşı tomb is cardinally orientated. In a similar manner to the Gīlān tomb in Nakhchivān and other Iranian tombs, it is located at the top of a hill in a remote location, in contrast to most of the other surviving tombs in Anatolia, which were erected in an urban context.

There are engaged columns on the four re-entrant (notched out) corners, with each facet consisting of blind arches with narrow tall flanking panels. These each have a shallow brick muqarnas hood near top and small rectangle panel above.⁵ The main surfaces are covered with low-relief geometric patterns executed in brick. There is a pointed arch over the door and the recessed doorway is flanked by shallow recessed rectangular panels. The overall form is similar to structures in Iran, such as the Gunbad-i Surkh tomb in Marāgha (542/1147-8)⁶ and the plan of the Gīlān tomb in Nakhchivān. The similarities between the Gunbad-i Surkh, which is the earliest of

³ Önköl (1996), p.234.

⁴ See chapter four, pp.366-8.

⁵ For a detailed analysis of the brick muqarnas see chapter three, pp.172-189.

⁶ See Pope (1981), Vol. VIII, pls.341 A and B.

the Marāgha tombs, and the Pinarbaşı structure include the engaged columns on the corners (smaller in the Anatolian example), voided mortar joints, decorative brick bonds, square plan with octagonal lantern, and squinches in the zone of transition. The main differences are the use of glazed highlights, lack of muqarnas, the bipartite nature of the blind façades and the single arch on the entrance façade at Marāgha. Overall the two structures have a very similar appearance. The tripartite façade with shallow, simple muqarnas is also particularly reminiscent of the Pīr mausoleum in Tākistān (6th/12th century).⁷ Where there was once an epigraphic panel that may have given the date or patron of the tomb, there is now just a shallow rectangular void in the south facet, high above the entrance.

The structure has been extensively repaired, and all four of the engaged brick columns on the corners have been completely replaced, making any analysis of their current form problematic. The absence/removal of mortar in select rising joints gives an enlivening decorative effect, in a similar manner to the patterns in the wide rising joints at Kemah and Sivas.⁸ The exterior features six different bonds, with all but one consisting of vertical and horizontal bricks, and four of them employing a variety of brick lengths.

The use of decorative brick bond to enliven the appearance of the surface is not limited to the exterior of the building.⁹ The interior of the dome is supported on semi-dome squinches constructed with bricks set at 45 degrees. The blind arches in between have tympana decorated with bricks in a horizontal offset bond between short vertical bricks. The arches at the cardinal points at the base of the dome have different patterns. The east and west-facing ones have a V-pattern, with the point facing down, and the north and south ones have the point facing up. The apex of the dome features small bricks, meeting at 45 degrees to make a V-on-its-side pattern, then full-size bricks making the same pattern on the lower part of the dome (fig. 2.1.3).

⁷ Daneshvari (1977), p.152 suggests the structure dates from the latter part of the 6th/12th century, rejecting the date of c. 493/1100 given in Hillenbrand (1972), p.53.

⁸ The external rising joint voids are c. 4cm deep and c. 25mm wide. The bed joints measure 15mm to 20mm. The interior features irregular rising joints that are between 5mm and 15mm wide, with bed joints between 20mm and 30mm.

⁹ The internal walls of the tomb are plastered and the section below dado height features new panelling.

Muqarnas

The muqarnas cells are entirely decorative, with the effect of articulating the four sides of the structure, in conjunction with the use of decorative brick bonds and voids in the rising mortar joints. There are two muqarnas compositions on each of the four sides of the building at the top of the tall, shallow recess panels. The muqarnas cells are perhaps the closest thing to external muqarnas hoods in brick to be found in Anatolia, with each hood consisting of four courses of cells.¹⁰ The bottom course has five cells, the next four, then three, with the top being a single cell without the same degree of depth as all the others, and each row of cells consisting of three courses of bricks. The cells consist of a flat back panel made of a full brick on top and bottom with two small square bricks with a void rising joint in the middle. This deep gap gives a further sense of depth to the cells. The sides are formed from bricks projecting at 45 degrees to the back panel, a short one at the bottom, with twice the projection for the second course of bricks. The roof of the cell is formed from the use of two triangle-shaped bricks that meet at their compound mitred tips (fig. 2.1.2). The unrepaired spandrels around the muqarnas also feature deep wide voids in the rising joints of the brickwork. When compared with other brick muqarnas of the period, these ones have a rather crude angular appearance, but viewed from afar the visual effect is similar to the more accomplished examples.

Stone: The tomb has a stone base that consists of two layers of grey ashlars that step back.¹¹ The point of access to the crypt is currently blocked. There are two small windows letting light into the crypt, one in the east and the other in the west side. The crypt has a cruciform plan and central cross vault that is similar to those at the Selime Sultan tomb in Selime near Aksaray and the Quraysh Baba tomb near Afyon.¹²

¹⁰ The upper rows of all the muqarnas niches have been repaired, but enough of the original structure remains to allow for an understanding of their original form.

¹¹ The first step back is 5cm; the second is 8cm, including a 45 degree bevel.

¹² See Özgüç and Akok (1954), pp.331-335 for details of the tomb exterior in its pre-restoration state. Plan 1 shows the crypt plan and section along with the six different decorative brick bonds used on the exterior of the structure.



Fig. 2.1.1 – Melik Gazi tomb, Pinarbaşı (c. late 6th/12th century) © R. McClary



Fig. 2.1.2 – Melik Gazi tomb, Pinarbaşı (c. late 6th/12th c.); muqarnas niche © R. McClary



Fig. 2.1.3 – Melik Gazi tomb, Pinarbaşı, dome interior © R. McClary

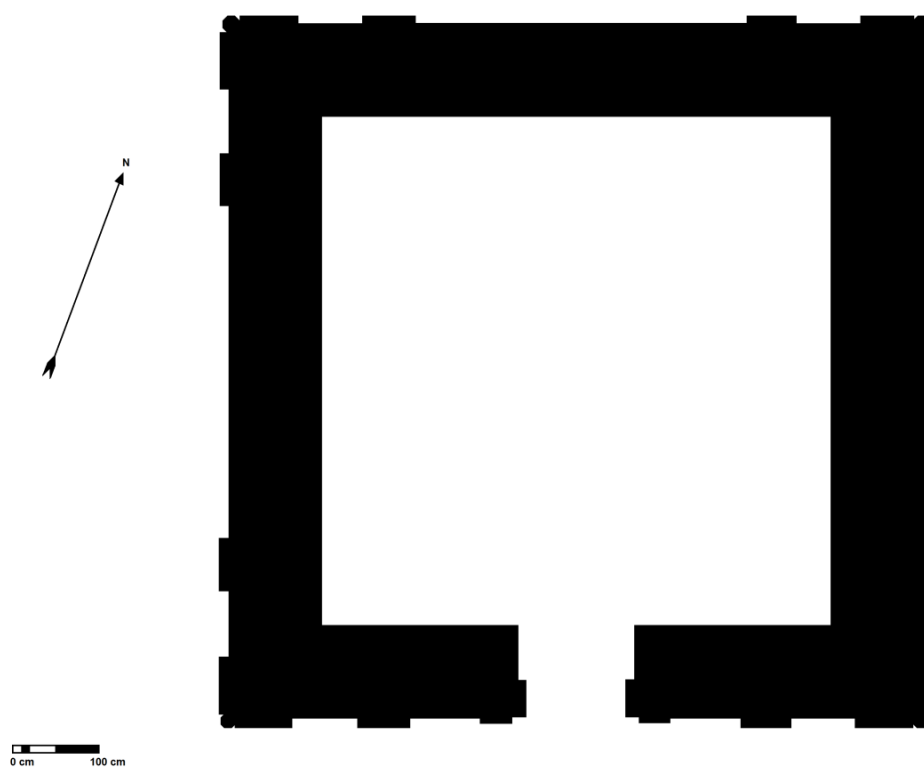


Fig. 2.1.4 – Melik Gazi tomb, Pinarbaşı; cross-section @ 110cm above current grade
© R. McClary

Appendix 2.2: Bekar Sultan tomb, Gülağaç nr. Aksaray

Location: Lat: 38° 23' 40" N Lon: 034° 22' 54" E

Date: c. late 6th/12th to early 7th/13th century

Documented: September 2013

Builder: Anonymous

Structure: Free standing octagonal tomb. No evidence of crypt (but the ground level will have risen)

Medium: Stone body, brick upper and roof

Stone

The tomb has recessed blind arches with an offset barrel-arched door set into a rectangular recess in one facet. The facets measure between 242cm and 247cm internally. The base stones are of a lighter grey than the wider foundation. The drum is in yellow stone, then brick from the epigraphic band up. There is a brick-built octahedral pyramid roof. The ashlar are c.54cm high, with widths that vary to suit, measuring between 20cm and 98cm. The external blind facets measure 35cm, have a 7cm right angle return then 252cm panel, another 7cm return and 35.5cm to corner. The door into the tomb faces south-west (243 degrees) and is slightly offset, rather than being in the centre of the facet as is normally the case (fig. 2.2.1). Above the door is a void that presumably held a now missing epigraphic panel. The portal facet is relatively simple, with no *cavetto* or engaged columns, unlike most other tombs of the region (figs. 2.2.1 and 2.2.5)

The upper sections of the blind arch panels are decorated with stones set in the manner of the brick decoration at Melik Gazi, Pınarbaşı. The pattern consists of a square of blocks, set narrow end to wide, with a small square in the centre (fig. 2.2.2). It is seen on all but the north, north-east and north-west facets. The pattern has the effect of successfully integrating the transition from stone to brick.

Brick

Above the blind arches is a wide band of Kufic epigraphy formed from bricks inserted into a white mortar base. This has a superficial similarity to the technique used for the upper band on the Tepsi minaret in Erzurum, but it is a less complex method. The style of the epigraphy is transitional between that of the Tepsi minaret and the Sivas minaret. There is a checkerboard pattern at Bekar that hints at the more developed knotwork, seen in brick at Sivas and in stone on the Kutalmış tomb door lintel in Niksar. There is a lot of blank space in the epigraphic band, but there are some stars and other patterns filling some of the voids. There are remains of turquoise blue glazed tile on the east and south-east facets. On the north face there is one example of overlapped *alif* and *lām*, not a true knot, but they do feature spear-like finials, in the style of the glazed ‘Izz al-Dīn tomb epigraphy in Sivas and the unglazed brick minaret epigraphic band on the minaret of the Sivas Great Mosque. On either side of the band of epigraphy is a narrow guard band, formed of alternating brick lozenges and (mostly missing) turquoise glazed *bacini* set into stucco (fig. 2.2.2). This style of guard band is seen at the roughly contemporary Mengücek Gazi tomb in Kemah and originated in the Saljūq architecture of Iran.¹³ The tomb has had extensive restoration in the latter years of the 20th century.

The epigraphic band around the top of the tomb has simple circular elements similar to the ‘Izz al-Dīn tomb in Sivas, as well as crude knotting and addorsed half-arrowhead tips of the *hastae* as seen in both the Great Mosque minaret and the ‘Izz al-Dīn tomb in Sivas. It may be viewed as a rather crude version of the tripartite Kufic epigraphy developed by the Ghūrīds. Of the eight facets, two have lost all of the lettering, one has lost most and five retain most of the letter forms. As a result of the losses and restoration¹⁴ a clear translation of the epigraphy has yet to emerge (fig. 2.2.3).

¹³ Examples can be found inside the Friday mosque in Iṣfahān (481/1088), Gulpaygān (498-511/1104-17) and Ardīstān (555/1160). See Wilber (1939), p.19, fig.1a.

¹⁴ The tomb has been extensively restored in recent years, particularly the octahedral brick roof, the muqarnas and the stucco bed of the epigraphic band. For pre-restoration images see Önkāl (1996), pls.208-217.

Above the upper guard band are two rows of finely executed muqarnas cells, each row of cells consisting of six courses of bricks. Above the muqarnas are another identical narrow guard band as below and then a lip formed from a single course of bricks before the octahedral roof in brick. The muqarnas cornice consist of two tiers, with the lower tier cells being like a lancet shape with the tip bent forward 90 degrees, in the Iranian manner. The upper section is tripartite, with a narrow lancet projecting in the middle made with small bricks.¹⁵ There is a vent hole at the top of the east facet in the middle of the lower muqarnas band. The lower tier of the muqarnas features alternating blank panels and cells. All the rising joints have deep voids that enliven the appearance of the composition. The upper band consists of tripartite cells united by a (repaired) continuous arched façade. That series of arches intrudes into the guard band above.

As with a number of tombs of the period the interior of the tomb features a brick dome above a band of blind arches. Each alternating arch spans a corner and form the zone of transition from the octagonal body to the circular dome base (fig. 2.2.4).

Glazed tiles

There are a few remaining small *cavetto* turquoise glazed tiles inserted in between baked brick lozenges in the three narrow guard bands. These are located at the top of the shaft of the tomb above and below the epigraphic band but most are now missing and the voids have recently been painted green. They alternate with brick horizontal lozenges. In addition, there are irregularly placed cobalt blue *cavetto* bowls set into the brickwork as well.

Mortar

All rising joints in the muqarnas composition except the ones on the edges have had the mortar removed for decorative purposes in the same manner as at the Melik Gazi tomb near Pinarbaşı.

¹⁵ For a detailed analysis and drawing of the muqarnas band see chapter three, p.181.



Fig. 2.2.1 - Bekar Sultan tomb, Gülağaç, nr. Aksaray (c. late 6th/12th c. to early 7th/13th c.)
© R. McClary



Fig. 2.2.2 – Bekar Sultan tomb, Gülağaç; upper blind arch facet decoration © R. McClary

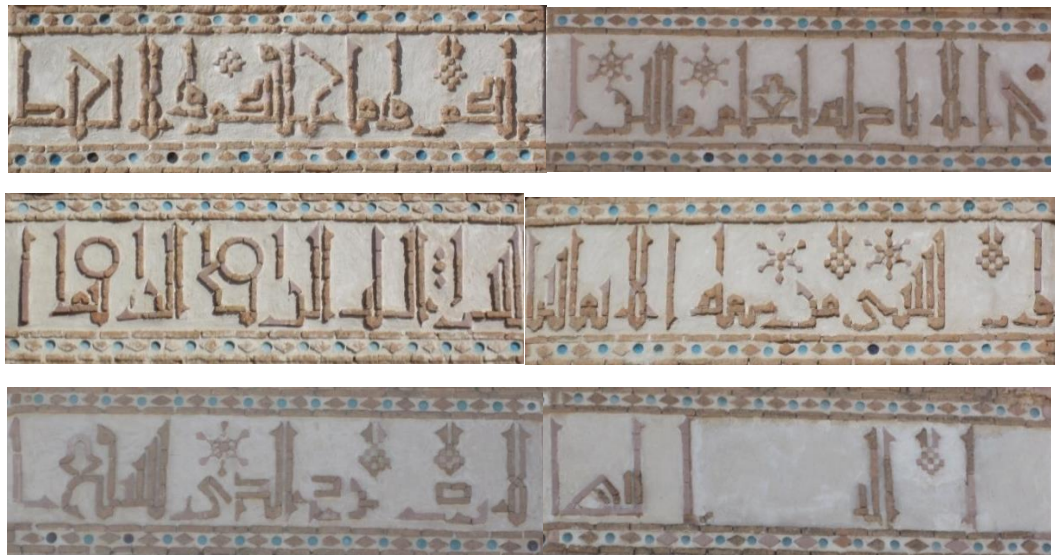


Fig. 2.2.3 – Six (of eight original) sections of epigraphic band on the Bekar Sultan tomb, Gülağaç © R. McClary



Fig. 2.2.4 – Bekar Sultan tomb, Gülağaç; internal dome © R. McClary

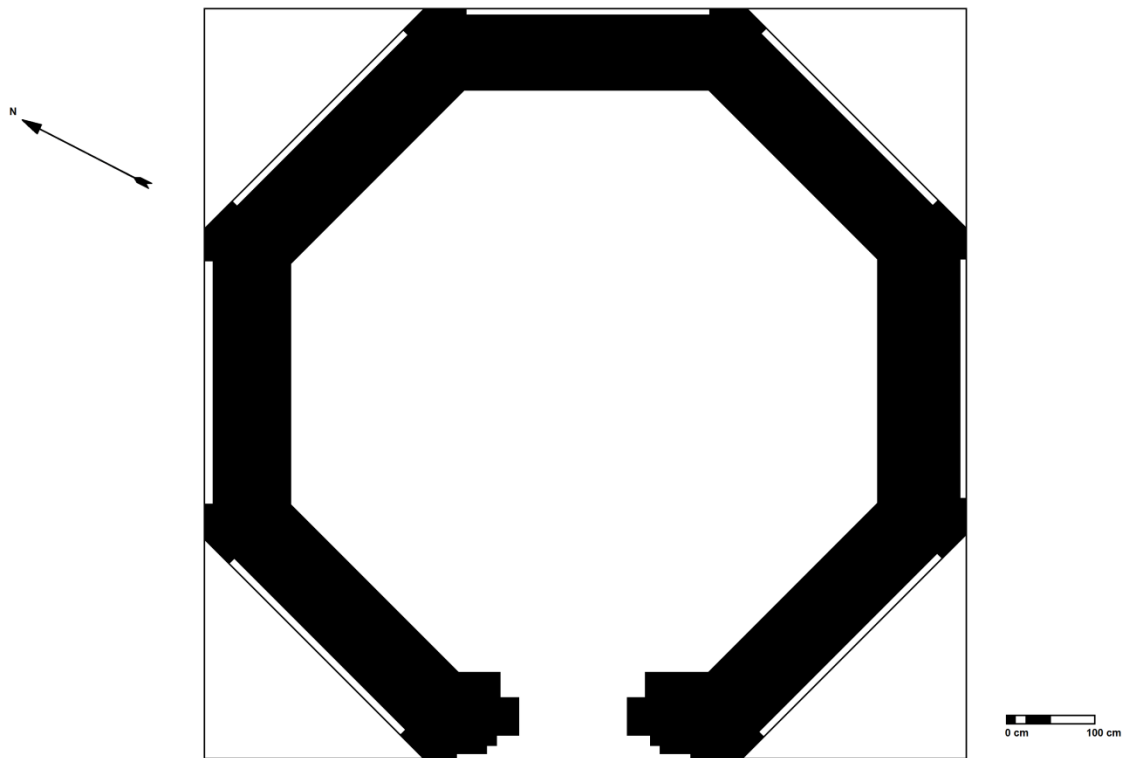


Fig. 2.2.5 – Bekar Sultan tomb, Gülağaç; cross-section © R. McClary

Appendix 2.3: Selime Sultan tomb, Selime nr. Aksaray

Location: Lat: 38° 18' 9" N Lon: 034° 15' 20" E

Date: c. 1st quarter of the 7th/13th century

Documented: September 2013

Builder: Anonymous

Structure: The cardinally oriented tomb is octagonal (with no square platform) and a crypt underneath. There has been extensive shifting and buckling of the structure over time. The style and the primarily brick construction of the tomb suggests a date in the first two decades of the 7th/13th century. It is, however, entirely possible that the tomb was constructed in the last two decades of the 6th/12th century as there is no epigraphic or dendrochronological evidence upon which to date the structure accurately.

The lower brick section of the portal has been extensively repaired with modern grey cement. The decoration of the portal wraps around the corner onto the flanking facets in an innovative manner, with vertically set bricks placed over short horizontal ones. The extension of the portal decoration onto the rest of the structure is not seen in many stone-built structures until the second half of the 7th/13th century. The inner decorative strap of the portal features the same form, vertical bricks over short horizontal ones, that integrate the façade into the broader decorative composition. There is a brick *cavetto* frame around the portal and geometrical strapwork in a panel set above the blind arch over the door (fig. 2.3.2). The lintel over the door features five square bricks face out with impressed patterns based on a swastika on each one (fig. 2.3.3). It is highly likely that the stones in the blind facets are a recent addition owing to their incongruous appearance and smoother surface than that of the base ashlar, as is the stone in the tympanum of the arch over the entrance.

The crypt consists of four small iwans (figs 2.3.5 and 2.3.6) with a central cross vault that is 177cm high at the centre. The interior surface is finished in rough stone with a low doorway to the east and a small window to the south.

Medium: The building is primarily brick-built, with a stone base.

Brick

The bricks are extensively weathered and many of the mortar joints have been repointed with modern grey cement. The engaged columns flanking the entrance are made with small curved bricks, set vertical next to horizontal and with a brick laid flat in place of a true capital (fig. 2.3.3). Some of the bricks on the east to north-east outside corner are as thin as 3.5cm. Although no glazed tiles survive, it is possible that there may have been some in the tympanum over the door (which appears to have modern stone restoration) but it is unclear. The entire roof of the tomb was replaced in the 20th century.¹⁶

Mortar

The original mortar is very white and hard with quartz-like aggregate.

Epigraphy

Although the tomb does not have any inscriptions, a stone measuring 1m x 0.36m x 0.35m was found during excavations around the site.¹⁷ It has five lines of text that read:

(مر) حوم مغفور

سعيد شهيد

دروش

بك بن

ج بك

¹⁶ For images of the restoration see Önköl (1996), pls.119-125.

¹⁷ Önköl (1996), p.89. He gives an unexplained transliteration of *Bey* for (بك) which perhaps is meant to be (بي) and gives the reading as *Merhūm Maghfūr Sayīd Shahīd Derwīsh Bey* (sic) *ibn Awruj Bey* (sic).



Fig. 2.3.1 – Selime Sultan tomb, Selime nr. Aksaray (c. 1st ¼ 7th/13th c.) © R. McClary



Fig. 2.3.2 – Selime Sultan tomb portal, Selime nr. Aksaray © R. McClary



Fig. 2.3.3 – Selime Sultan tomb portal moulded tile detail, Selime nr. Aksaray © R. McClary

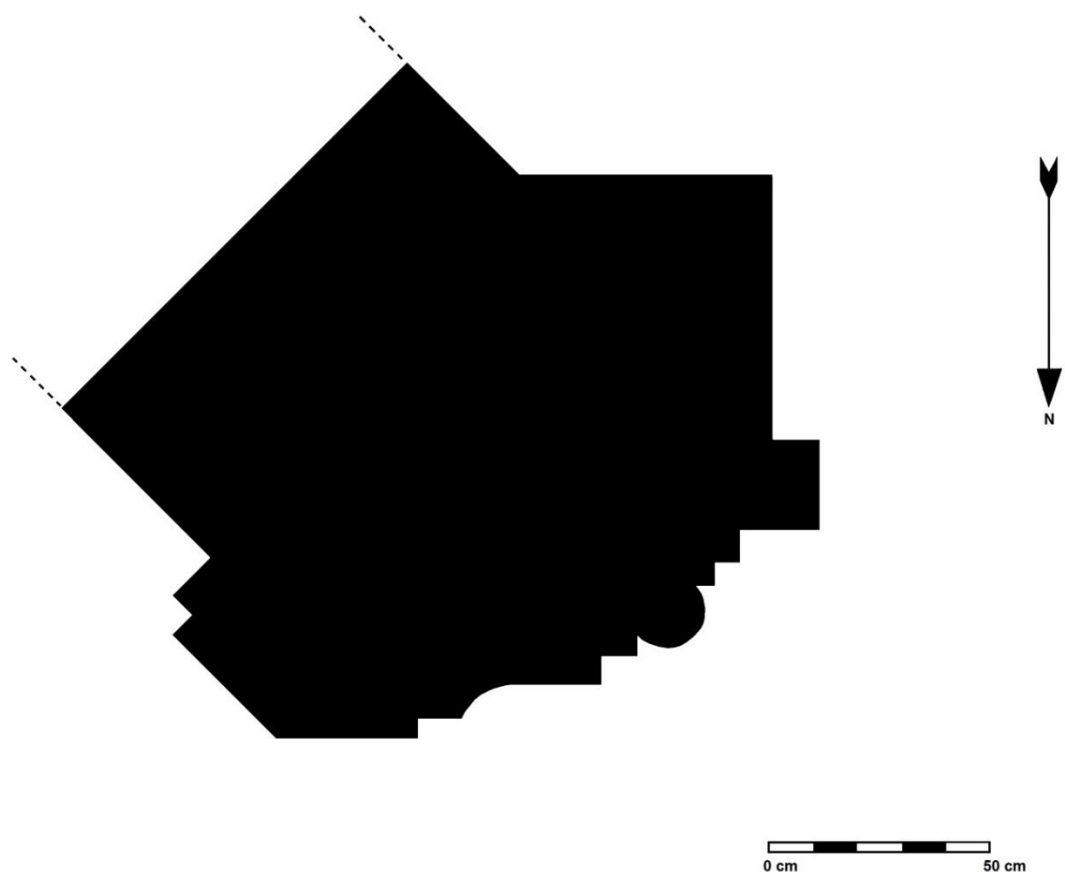


Fig. 2.3.4 – Cross-section of the Selime Sultan tomb portal, Selime @ 191cm above current grade © R. McClary



Fig. 2.2.5 – Selime Sultan tomb crypt north iwan, Selime © R. McClary

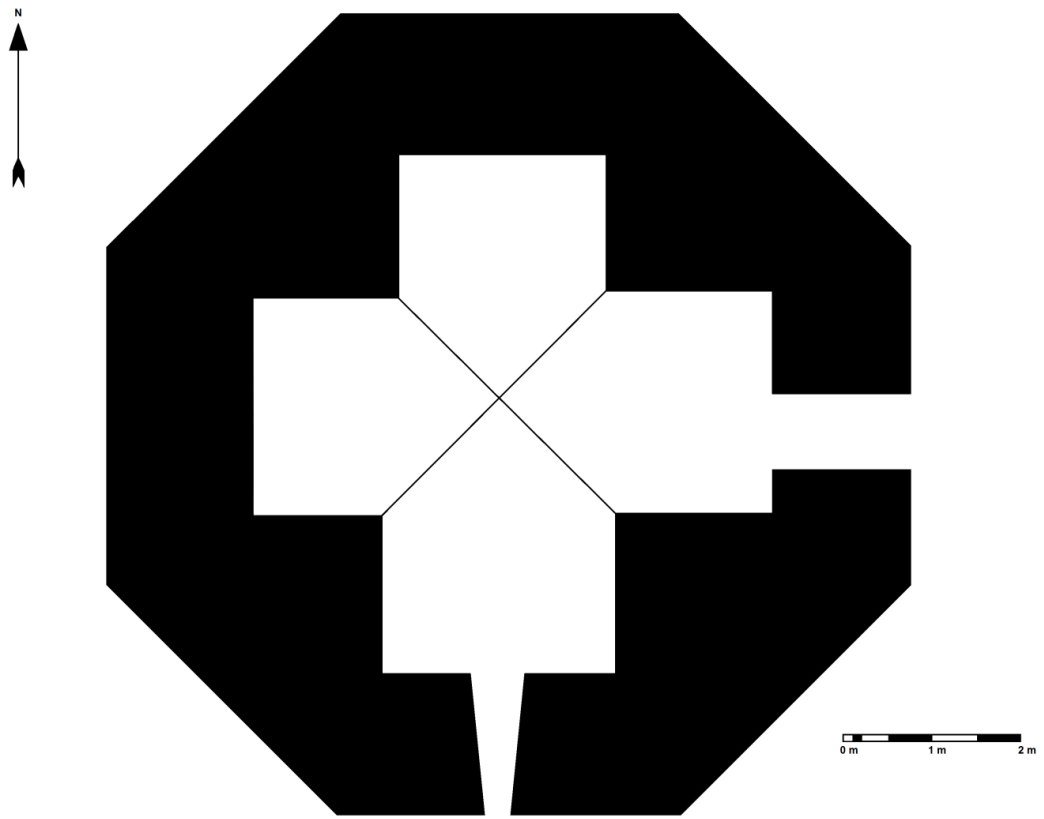


Fig. 2.3.6 – Cross-section of the Selime Sultan tomb crypt, Selime © R. McClary

Appendix 2.4: Tepsi minaret, Erzurum

Location: SW corner of Erzurum citadel Lat: 39° 54' 27" N Lon: 041° 16' 34" E

Date: c. mid 6th/12th century

Documented: January 2013

Builder: Anonymous

Structure: Tapered cylindrical minaret with stone base and brick shaft. No transition zone. The use of minarets as landlocked lighthouses was common in Khurāsān and other desert areas of Iran, and may have been the primary purpose of the Tepsi minaret. It is on the south west corner of the citadel and is not attached to a mosque. The Saltuqid-era citadel mosque is nearby, but there is no sense of any architectural or spatial relationship between the two structures.

Medium: Stone base and lower shaft, brick upper.

Stone: The minaret is integrated into the citadel wall and the grey stone base is irregular in shape. It is primarily square, but the north east corner is cut off to create a fifth side. The lower section of the cylindrical shaft features *ablaq* bands of red and white stone. The 21m tall minaret is entered through a door in the north side of the base. It has moulded jambs and a decorated blind arch tympanum carved to a depth of 8mm. The door itself is 845mm wide. The minaret is of a different typology to the later brick (and stone) minarets of Anatolia. The cylindrical shaft has a far greater taper than any of the other minarets in Anatolia, and is of a similar form to the Kalyān minaret in Bukhārā, built in 521/1127.

The Tepsi minaret is the only one from the early period that has a portal-like stone entrance, with receding fillets and geometrical decoration. There is a stepped transition from the stone base of the minaret to the brick upper section on the interior. The transition spirals in the opposite direction to the staircase. The base of the shaft consists of six layers of ashlar, alternating in colour from black to red, white, red, white and a final course of red stone, before the brick construction above.

In the stone lower section, arches spiral around the central core to the outer shaft, stepped and connected prior to the transition to the brick structure that supports the

stone stair treads. The treads are made of three grey volcanic stones sitting on a brick base, consisting of staggered bricks. They have a variable rise, with a minimum of 175mm, located seven steps from the top, and a maximum rise of 275mm, 32 steps from top. The run of the wedge-shaped steps goes from an average of 113mm at the central octagon, to 379mm at the inner wall edge. There are 63 full steps, along with three narrower steps at the top of the staircase.

The white stones of the epigraphic band are irregular in width, and the vertical breaks often correspond with either an *alif*, a *lām* or cutting through a ligature, as they do not divide any individual letters in two. This process demonstrates the mastery of both brick and stone, as the entire band would have been composed in advance, in order to allow for it to have been constructed on the ground. Subsequently the individual components would have been lifted into place. The stones are not discoloured and grey, in the way that the mortar between them and the red brick course above is. The stone used for the epigraphic band is the same kind as used for the two white bands at the base of the shaft, which are also of irregular width, and have retained a pure white appearance that the mortar has lost over time.

Brick: The bricks used in the construction of the minaret are of a uniform red colour, indicating a consistent firing temperature across all the batches. Unlike a number of the later minarets, the bricks are rectangular, rather than radial in form. A mortar sample from the interior of the shaft measures 230mm x 58mm. The sample was located on the north side of the interior, thirteen courses from the top of the shaft. The mortar beds on the interior of the shaft are between 14mm and 17mm thick, while the rising joints are irregular in size, but are generally narrower than the beds. This is because of the use of rectangular bricks to generate a circular plan. This also helps to explain the concomitant prevalence of wider rising joints on the exterior of the minaret shafts. This pattern continues in later minarets, even after the introduction of radial bricks meant that it was no longer unavoidable.

The brickwork is of horizontal bond with half-brick offset. There are wide rising and narrow bed mortar joints up to the guard bands of the epigraphic band, two meters below the top of the shaft. The outer core of the minaret shaft at the uppermost south-facing window is 945mm thick.

The lower section of the central column is circular and of stone; the upper section is octagonal and of brick. Each facet of the octagonal central core is built up of a row of two full bricks, then a row consisting of one full brick in the middle, with two short bricks, on each side. The short infill bricks are between 52mm – 58mm in width. The order of two full or one full and two small is switched at each corner, to avoid the need to cut large bricks in order to create the octagonal form. The rising mortar joints in the layer consisting of two full bricks are between 40mm and 60mm wide. Although a number of later Anatolian minarets have a central column, the octagonal form of the Tepsi column has a precedent in the Chihil Dukhtaran minaret in Iṣfahān.

Two identical guard bands border the band of epigraphy. They each consist of two single courses of horizontal bricks, with no visible rising mortar joints, and a band of small square bricks set at 45 degrees to create a band of lozenges. These echo the wide upper band of *hazārbāf* lozenges above them, formed from horizontal and vertical bricks of two types, long-faced and short-faced. The only other examples of courses of bricks with no visible rising joints are the two courses at the top of the shaft above the band of *hazārbāf* lozenges. The epigraphic band itself is composed of red bricks, deeply set into irregular width white stone blocks.

The bricks of the calligraphic band have not suffered any losses except for where the large clock face was inserted in the south side of the shaft during the late Ottoman era. The damage on both sides of the clock provides an insight into why there has been such little loss to the rest of the bricks in the band. The white stones have been deeply excavated to allow for a large portion of the bricks to be inserted. In the few visible examples, most of the bricks body is set within the stone, with only a short section projecting in relief. As a result of the surface delamination that the stone has suffered, most likely as a result of the freeze and thaw process, is not significant enough to affect the brick inserts.

Epigraphy: There is one band at the top of the shaft.

Dating the Tepsi minaret is problematic but the epigraphy can be of some help. It gives the title “*our master Diyā al-Dīn*”,¹⁸ indicating that the patron was Abū’l-

¹⁸ Sauvaget and Wiet (1937), Vol. 9, pp.1-2.

Muẓaffar Ghāzī, Diyā al-Dīn (c. 518-526/1124-1132).¹⁹ However the text goes on to say “*Ināndj Yabghu, Alp Toghriḷ Bek ibn al-Muẓaffar Ghāzī ibn Abū’l Qāsim*”.²⁰ If the genealogical statement regarding the patron being the son of al-Muẓaffar Ghāzī is given greater weighting than the honorific Diyā al-Dīn then it may mean that the tower was built during the reign of Abū l-Muẓaffar Ghāzī, Diyā al-Dīn’s successor Saltuq II ibn ‘Alī, ‘Izz al-Dīn. If that is the case, it would put the tower in the date range of 526-563/1132-1168.²¹ This period is closer to that given by Sauvaget and Wiet, which attributes the inscription to c. 550/1155.²² However, no reason for this specific date is given. Ünal refrains from attributing any date to it in his discussion of the minaret,²³ but Bakırer dates the minaret to the late 6th/12th century.²⁴ This would put construction during the rule of either Muḥammad or Māmā Khātūn, neither of which fit with the names, titles, or genealogy given in the epigraphic band. The conflicting evidence makes a more specific date range tentative at best, but the style of the minaret, and the epigraphic content, suggest a date of construction in the middle of the 6th/12th century. The issue is further complicated by a portion of the epigraphy which is missing.

Although the inscription has been referred to as an “*inscription coufique en briques rouge sur un fond blanc de chaux*” (Kufic inscription in red brick on a white background of lime)²⁵ it is Ünal who correctly describes the bricks in relief as being *incrustées dans un rang d’assises de pierre* (embedded in a row of stone seats).²⁶

Mortar: The mortar sample, from the interior of the shaft, measures 25mm x 20mm x 13mm. It has a pure white interior and grey exterior and the appearance of being gypsum-based, as the chopped straw has not been degraded in the way it would with any lime content in the mortar. It has no visible sand content, a very hard texture and appears to have been very stiff when applied.

¹⁹ Bosworth (1996), p.218.

²⁰ Sauvaget and Wiet (1937), Vol. 9, pp.1-2.

²¹ Bosworth (1996), p.218.

²² Sauvaget and Wiet (1937), Vol. 9, pp.1-2.

²³ Ünal (1968).

²⁴ Bakırer (1980) Table 2.

²⁵ Sauvaget and Wiet (1937), Vol. 9, pp.1-2.

²⁶ Ünal (1968) p.26.



Fig. 2.4.1 – Tepsi minaret, Erzurum (c. mid-6th/12th c.) © R. McClary

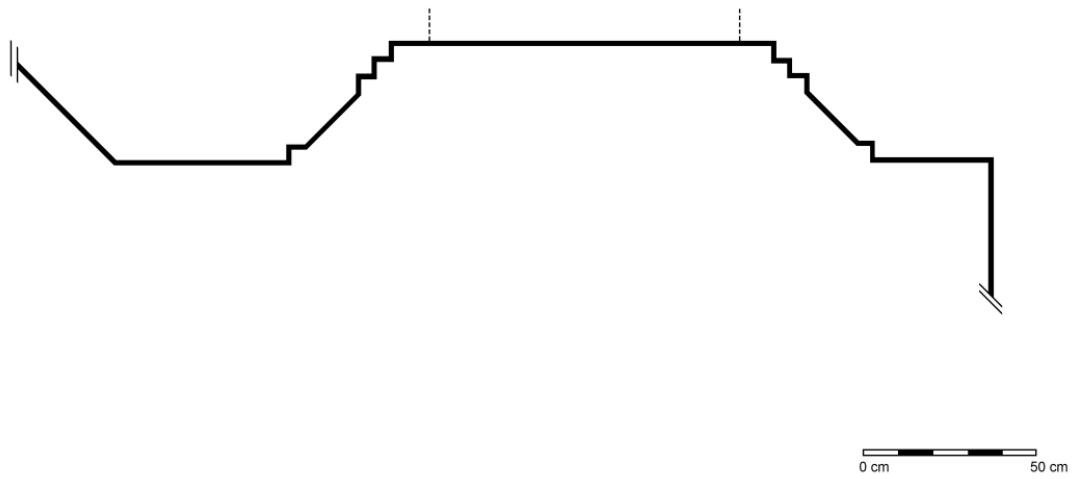


Fig. 2.4.2 – Door profile, Tepsi minaret, Erzurum © R. McClary

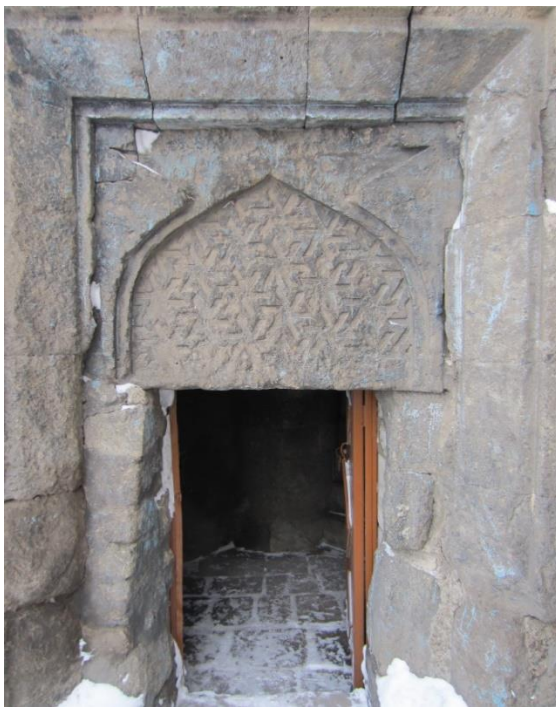


Fig. 2.4.3 – Tepsi minaret entrance

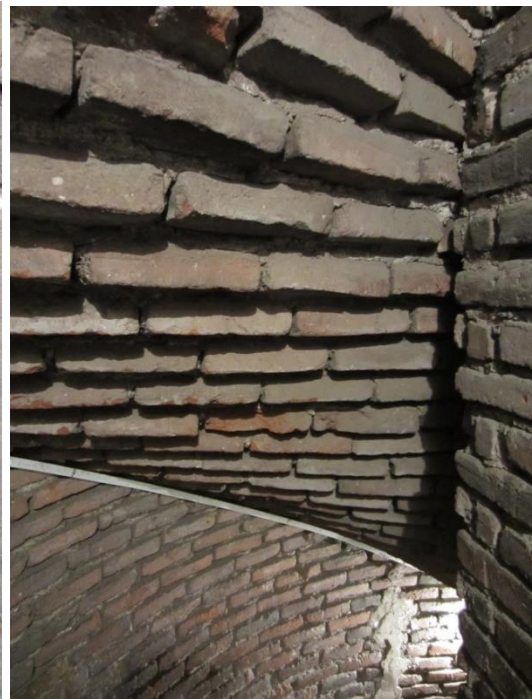


Fig. 2.4.4 – Tepsi minaret shaft interior



Fig. 2.4.5 – Tepsi minaret, Erzurum; epigraphic band © R. McClary

Appendix 2.5: Harput Great Mosque minaret

Location: Lat: °38 42' 22" N Lon: 039° 15' 18" E

Date: 561/1166²⁷

Documented: February 2013

Builder: Anonymous

Structure: Cylindrical minaret on the north-west corner on the roof of the mosque

Medium: Brick

The mosque is dated by epigraphy to 561/1166. The minaret is integral to the rest of the structure and appears to be coeval, making it one of the earliest brick minarets attached to a mosque in Anatolia. Although presently rather diminutive in height, and in a rather crude provincial style, the use of wide and narrow bands of brick decoration on the shaft shows a more conscientious attempt to recreate the lavish *hazārbāf* decoration, if not the scale, of the 6th/12th-century minarets of Iran and northern Iraq than any of the other surviving early minarets in Anatolia.

The decorative external bricks are of a finer quality than those used for the construction of the interior arches of the mosque. The external blind arch under the minaret, deep enough to be considered a very shallow iwan, is filled with alternating bands of decorative brick and two courses of stone above the height of the stone dado. There are decorative bricks in three separate bands of pattern.

The lower band of brick decoration on the base of the minaret consists of two courses of staggered bricks on top, and two on the bottom. These range in size from 220mm to 250mm and are of irregular thicknesses, with a 42mm thick brick next to one of 49mm thickness. In between are alternating \top and \perp shapes consisting of long horizontal (145mm x 48mm) and short vertical (95mm x 42.5mm) bricks. The middle band consists of vertical and horizontal bricks widely spaced, with a square brick set in the middle to generate another square based pattern. The upper section consists of three soldier bricks (stacked vertically) with thick mortar joints next to

²⁷ Sauvaget and Wiet (1937), Vol. 9, p.48. The date is for the mosque and the minaret is presumed to be contemporaneous.

three stretcher bricks (stacked horizontally). Below, the pattern is repeated in reverse. Above are two courses of *c.* 1/3 offset horizontal bricks, while below the two main bands there is only one course of bricks.

A dodecagonal transition zone starts at the roofline section. It has suffered extensive losses, and the facets with surviving decoration have vertical and horizontal bond patterns. The shaft itself has three main decorative sections divided by narrower bands. There are two rows of plain half offset horizontal bond above the transition zone. The narrow pattern above and below the lowest of the three wide decorative patterns consists of addorsed pairs of L-shaped patterns formed from two bricks. These pairs are alternatively inverted, and the vertical elements connect with the plain band of brick at the top and bottom. The pattern has the appearance of a simplified Greek-key pattern.

The first wide band creates a dynamic pattern, through the use of varying lengths of vertical and horizontal bricks, and is as wide as the two remaining decorative bands above. These two bands are based on a hexagonal pattern, built up with pointed ellipse shaped bricks, and triangles with one side curved to match the ellipse on the lower of the two bands, with just the pointed ellipses on the upper band. They represent positive and negative versions of the same pattern, with the void areas of the lower band being delineated with bricks in the upper band. Lozenge and circle shapes alternate between two bands of horizontal bond regular bricks at the top of the upper, and bottom of the lower, of the top two large decorative bands. These decorative bricks, seen on a number of structures, were probably produced in specially shaped moulds. Although the source of the pattern remains unclear, the upper pattern can be seen to be replicated later in a band on the west façade of the Late Byzantine Hagia Theodora church in Arta, Greece.²⁸ In that late 7th/13th century example, the pattern is delineated with the rectangular face of regular bricks, but is otherwise identical.

The minaret leans significantly to the east, and there are losses to the upper section of the shaft. The basket and upper narrow shaft have been rebuilt to be closer to level.

²⁸ See Ousterhout (1999), p.200, fig.163.

Two other brick bonds are visible at the top of the surviving section of the shaft. Above the narrow band of circle and lozenge bricks are two courses of horizontal bond, with no offset, narrow rising joints, and very wide bed joints. Above this is a fragmentary section of two courses of horizontal bricks interconnected by short vertical bricks. As with all but the large band of horizontal and vertical bond on the shaft, this type of decoration is unique in Anatolian minarets, and shows this is not likely to be the work of an indigenous craftsman, but of someone familiar with the minarets of Iran.

The narrow band of lozenges and circles are seen on the Chihil Dukhtaran minaret in Işfahān. There are also horizontal and rising bonds on the octagonal section of the Işfahān minaret, and they share the same method of decorating the lower section of the minaret shaft. The Harput minaret is far less attenuated, but the builder had clearly been drinking from the well of Işfahāni methods and decoration.

Brick: Losses to the shaft clearly demonstrate the separation between the structural plain bond bricks that form the inner core of the shaft, and the outer skin of decorative bonds, visible on the exterior of the shaft. The inner core features a bond that varies between 1/2 and 1/3-offset bricks with wide mortar beds and an irregular surface. The outer skin employs large amounts of mortar between the bricks to form the decorative patterns. This technique is not employed to the same extent on later minarets, as there are less decorative bands and the brickwork is not separated into inner core and outer skin.

Mortar: The mortar sample from the Harput Great Mosque minaret measures 12mm x 10mm x 9mm. It is from the exterior of the base, which forms part of the west wall of the mosque. It is very white, with no visible use of sand. Unlike the mortar at the Tepsi minaret in Erzurum, the mortar at Harput is very crumbly and contains a large number of black aggregate inclusions that vary in size from <1mm to >5mm. There is a slight yellowing of the exterior face of the mortar.



Fig. 2.5.1 – Harput Great Mosque minaret (561/1166) Fig. 2.5.2 – Harput Great Mosque minaret base

Appendix 2.6: Great Mosque minaret, Akşehir

Location: NE corner of mosque enclosure Lat: 38° 21' 23" N Lon: 031° 24' 41" E

Date: 610/1213

Documented: February 2013

Builder: Anonymous

Patron: Abū Saʿīd ibn Ibrāhīm ibn al-Ḥajj Najm al-Dīn Najīb ibn Abī'l-Muʿammar al-Ḥayrāt²⁹ (named in epigraphic panel on the west facet of the base).

Medium: Brick, stone and glazed tile

Structure: The minaret is freestanding, in the north-east corner of the site. It consists of a square base, an octagonal transitional zone with blind arches, and a cylindrical shaft. This makes the Akşehir Great Mosque minaret the earliest securely dated example of the style of minarets built in Anatolia in the first few decades of the 7th/13th century. Öney suggests that the balcony and upper shaft are not original.³⁰

The square base is made of brick mixed with stone, with only the lower section being solely stone. The west face of the base features antique marble spolia, one of which has been recut and used for the epigraphic panel that gives the date of 610/1213. The upper edge of the square base has a row of white coping stones, some of which have been replaced with concrete in sections in the 20th century.

The inscription panel mentions earlier work, suggesting that the minaret was added to a pre-existing mosque, possibly built by the father of the patron of the minaret.³¹

The facets of the octagonal section feature blind recessed pointed arches. There are central diamond patterns constructed from horizontal and vertical bonds in the blind arches. They are mostly missing their original glazed tile intarsia, although four fragments remain in the north-east facet. The band of glazed intarsia in the upper part of the transition zone facets features turquoise eight-pointed stars formed from two overlapping squares, offset at 45 degrees, combined with dark blue tiles to create a

²⁹ Meinecke (1976), Vol. 2, p.23.

³⁰ Öney (1967), p.179.

³¹ See *ibid.*, p.182 for the full text of the panel.

rectangular band. Fragments remain in the north east and east facets, which appear to be the earliest use of cobalt blue glaze on a minaret in Anatolia. There are crenellated corners of the octagonal drum, a feature that appears to be unique in early Anatolian Saljūq minaret decoration. Below the crenellation is a band of V-shaped projections six bricks high.

The central core of the minaret is cylindrical in form, unlike the octagonal one in Erzurum. This is a result of the development of radial bricks. The shaft has a marble torus collar near the top. There are no muqarnas cells on the basket base; instead there are five tiers of V-shaped dog-tooth projections, each consisting of three courses of bricks, with each tier being separated by two courses of flat bricks.

The base of the minaret features spolia panels from churches, perhaps to demonstrate the subjugation of the Christian population.³² The epigraphic panel is cut into a previously decorated spolia slab.

³² Referring to the Antalya city walls, Redford and Leiser (2008), p.103 state that “the prominent employment of recognisably Christian architectural sculpture is obviously symbolising the victory of one religion over another.”

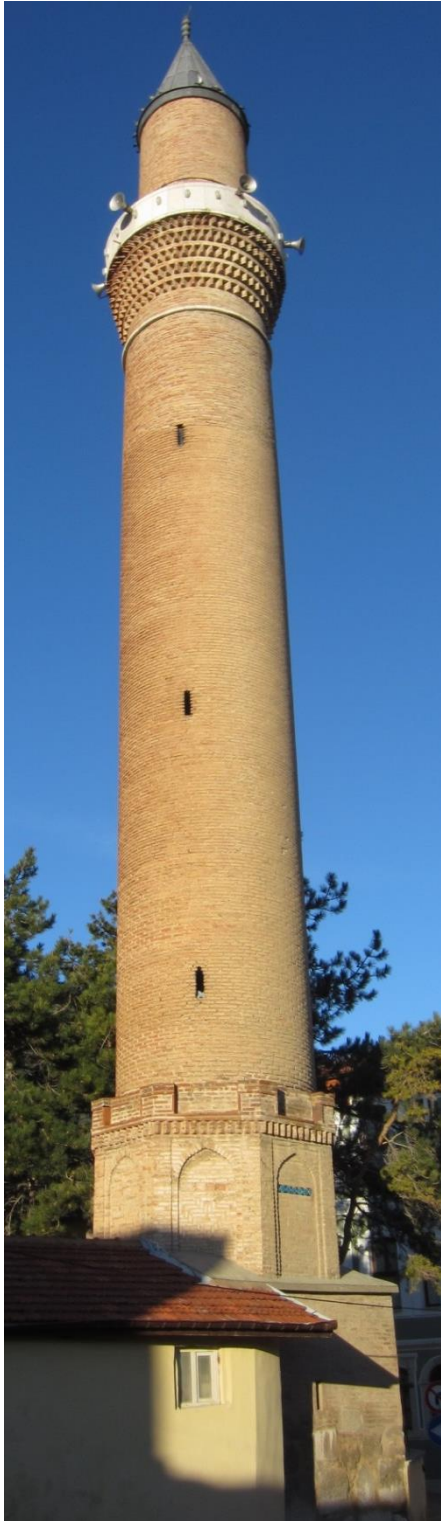


Fig. 2.6.1 – Akşehir Great Mosque Minaret (610/1213) (L) and Shaft interior (R)
© R. McClary



Fig. 2.6.2 – West face of base with spolia © R. McClary



Fig. 2.6.3 – North east corner of zone of transition © R. McClary

Appendix 2.7: Hötüm Dede minaret, Eski Malatya

Location: Lat: 38°25'09" N Lon: 038°22'01" E

Date: c. early 7th/13th century

Documented: December 2010

Builder: Anonymous

Medium: stone, brick, glazed tiles, mortar

Structure: freestanding minaret with square base of stone with an octagonal zone of transition and a cylindrical shaft of brick

This freestanding minaret is c. 50m south of the Great Mosque and is estimated to date from the 1st quarter of the 7th/13th century.³³ It has a square rubble stone base with an octagonal transition zone, and a cylindrical shaft constructed of primarily yellow bricks that are between 235mm and 245mm x 50mm. One small turquoise tile survives at the top of the north-west face of the octagonal section. It is an eight-pointed star, surrounded by cut brick inserts, to create a rectangular band, from which all the other tiles are now missing. The upper section of the shaft is missing at the point where the *şerefeli* projection would have started. There are the remains of part of a decorated band at the very top of the shaft.

The octagonal section has half offset bond with narrow rising and bed joints. The shaft features a more decorative bond of half offset bricks with narrow bed and wide rising joints, in the manner of the Sivas minaret. The irregular finish of the stone base, as well as the ruins of stone walls nearby, suggest that the minaret was originally attached to, or associated with, a now mostly lost structure.

The mortar sample from the Hötüm Dede minaret in Eski Malatya is 14mm x 12mm x 4mm. It is from the south face of the octagonal transition zone. The minaret is built using a soft granular mortar that is very crumbly and comes apart easily when touched. It has a very high sand content, and is yellowish in colour with small saffron yellow and black inclusions. There is a slight darkening and fading to the exposed surface, with no sign of stiffness at the time of use. The original exterior surface of

³³ Bakırer (1980), Table 2.

the bricks and the mortar are deeply eroded. The Malatya sample is of a fundamentally different nature than the mortar used in the Erzurum, Sivas, Harput or Aksaray minarets. It is the most highly eroded of the mortar typologies, and the one with the highest ratio of sand. There is no sign of a significant amount of either lime or gypsum, or any evidence of organic material.



Fig. 2.7.1 – Hötüm Dede minaret, Eski Malatya (c. early 7th/13th c.) © R. McClary



Fig. 2.7.2 – Glazed decoration on octagonal section of the Hötüm Dede minaret, Eski Malatya
© R. McClary



Fig. 2.7.3 – Brick and mortar detail on octagonal section of the Hötüm Dede minaret, Eski Malatya
© R. McClary

Appendix 2.8: Melik Sunullah mosque minaret, Eski Malatya

Location: Lat: 38°25'12" N Lon: 038°21'47" E

Date: c. early 7th/13th century

Documented: January 2013

Builder: Anonymous

Medium: Stone base with brick octagonal zone and a shaft of horizontal bond with half-brick stagger.

A band of square green glazed tiles runs around the base of the two tier muqarnas support for the (missing) balcony and upper structure.

The mortar beds in the shaft are wide rising/narrow bed, whilst the octagonal section features narrow rising/narrow bed.

The separation between the stone base and the brick octagonal section is created by a wooden rim joist/beam all around. The internal structure of the upper row of muqarnas can also be seen to be reinforced with small projecting wood beams.

Structure: Brick minaret with octagonal zone of transition and square stone base.

Located c. 200m west of the Great Mosque, this minaret appears to date from the early 7th/13th century, according to Bakırer.³⁴ The entire base is of stone, with two epigraphic panels set into the north wall. Sinclair translates the date in one panel as 1394 CE but the minaret is not bonded to the structure of the minaret and the panel, which is a later addition, states the mosque was built by Çekez ibn Abdullah Hüsnü.³⁵ The smaller, upper inscription has two lines of text, while the lower one has three. The bricks are redder than the other minarets in Eski Malatya, indicating a better quality. The minaret is unique in the use of squared wood rim joists set between the stone base and the brick upper section, with the wood showing signs of decay but still performing a structural load-bearing role. The octagonal base has short blind arches just at the top, below the cylindrical shaft. A doorway at the roof height

³⁴ Bakırer (1980), Table 2.

³⁵ Sinclair (1989), Vol 3, p.10.

of the mosque accesses the minaret through the west facet of the octagonal zone. The octagonal section is built up with alternating courses of regular and then narrower bricks. The rising and bed mortar joints are of a similar width. The use of two sizes of bricks appears to be in order to stagger the bevelled corner bricks, of which there are a limited number of variations.

At the top of the shaft there are remains of two tiers of brick muqarnas projections, four courses above a fragmentary glazed green square tile band. The course at which the muqarnas cells begin to project, four courses up from their base, marks the transition to a different and much darker brick. It is unclear if this was as a result of a deliberate aesthetic choice, or just a new and differently fired batch. At the top of the minaret, fragments of the timber support of the original upper section of the minaret survive.



Fig. 2.8.1 – Melik Sunullah minaret, muqarnas (L) Wood transition from stone to brick (R)



Fig. 2.8.2 – Melik Sunullah minaret, zone of transition (L) epigraphy on north of base (R)



Fig. 2.8.3 – Melik Sunullah mosque minaret, Eski Malatya (c. early 7th/13th c.) © R. McClary

Appendix 2.9: Eğri minaret, Aksaray

Location: Lat: 38° 22' 36" N Lon: 034° 01' 45" E

Date: 616-634/1220-1237

Documented: January and September 2013

Builder: Anonymous

Structure: Brick minaret. Square base with bevelled upper corners and cylindrical shaft. It was attached to the north-west corner of a now lost mosque.

Medium: Brick, stone and glazed tile

The minaret, built during the reign of 'Alā' al-Dīn Kay Qubādh I,³⁶ leans quite severely to the north. It has a generally square base which varies between three and four courses of ashlar, with brick courses above. There is an irregular plan, and the south and west sides may have been attached to a now lost mosque, as they are the only two unarticulated facets. One of these facets, facing south, has a door accessing the staircase, which comprises 92 steps.³⁷ The base consists of rectangular bricks with a short face of c. 115mm and a long face of c. 235mm x c. 45mm, but ranging from 40mm to 50mm in height. The mortar beds range in thickness from 15mm to 20mm. The base bricks are of a lower quality, and more eroded, than the red bricks used for the shaft. The stone section of the base is intact, however there has been a degree of collapse of the bricks in the north side of the base, resulting in the lean of the shaft. There are also large cracks in the east side of the brick section of the base. The profile of the lower section of the minaret is articulated by a number of projecting and receding brick courses. Above the three courses of stone, the north face of the minaret has twenty-two courses before two courses corbel out, fourteen courses slope back, three courses corbel out, then a step back to seventeen courses, before the zigzag section of the shaft begins.

The main lower section of the shaft features a zigzag pattern formed by V-shaped voids, six courses above a band with circular voids in the rising joints, with a few of

³⁶ Gabriel (1962), p.73.

³⁷ *Ibid.*, p.67.

the cup-shaped turquoise intarsia remaining. A band of decoration above the zigzag section consists of a series of squares, formed from two vertical and two horizontal bricks in the form of an L next to an inverted L, with the central square void filled with a glazed tile.

The upper band of decoration is based on an eight-pointed star composition. An earlier example of a simpler, but related, pattern in brick is seen in the early 5th/11th century Dāmghān minaret, on the fifth major band of decoration from the bottom of the shaft. Complexity is added by using only one element, rather than two, in the band whilst doubling the knotted strapwork around the central star, thus creating the effect of pseudo-epigraphy.

Between the band of decoration and the blind arches below the muqarnas there are twelve courses of bricks with narrow rising and narrow bed joints. Six courses down from the blind arches there is a corbeled step. At that point there is a band of square holes that provide light and ventilation, but their original purpose was most likely as scaffolding holes. They are similar in size, shape and location to the band of scaffold holes at the base of the muqarnas projections of the coeval brick built minaret of Qumriyya mosque in Baghdad, dated to 625/1228.³⁸ There are six in a row on the Qumriyya mosque minaret, all of which measure 15cm x 15cm. The domed top of the narrower upper shaft is of a similar form, but lacking the decoration, as coeval minarets in Baghdad, such as the al-Khafaffin mosque.

Brick

Poorer-quality bricks are used in the base of the Aksaray Eğri minaret than the ones used for the shaft. The base bricks are heavily eroded, and contain numerous aggregate inclusions which reveal that they were not levigated. There is a mix of yellow and red rectangular bricks, while the shaft consisting of uniformly light red bricks which show hardly any sign of erosion, and are of a finer quality. The losses to the shaft are primarily limited to the glazed intarsia. Most of the yellow bricks are on the south and east flat surfaces of the base. These were almost certainly part of the

³⁸ Janabi (1982), p.204.

internal fabric of the original mosque structure, as these are the only two flat unarticulated facets of the square base, and the south facet has the door in it.

Mortar

The mortar used in the Eđri minaret in Aksaray has small white inclusions which are lumps of lime that did not mix with the aggregate.³⁹ The mortar contains organic material, most likely to be straw, with a fibrous stem that has been bleached white, a tell-tale sign of the presences of alkaline lime. There is sand and a wide array of sizes of black stone aggregate sizes in the mortar mix. They are rounded river bed aggregate, not the more efficient angular crushed aggregate, which indicates that the source of the sand and gravel for the mortar was the nearby river that runs *c.*20m from the minaret site. Of the limited samples analysed, this is the closest to the Byzantine type of mortar.⁴⁰

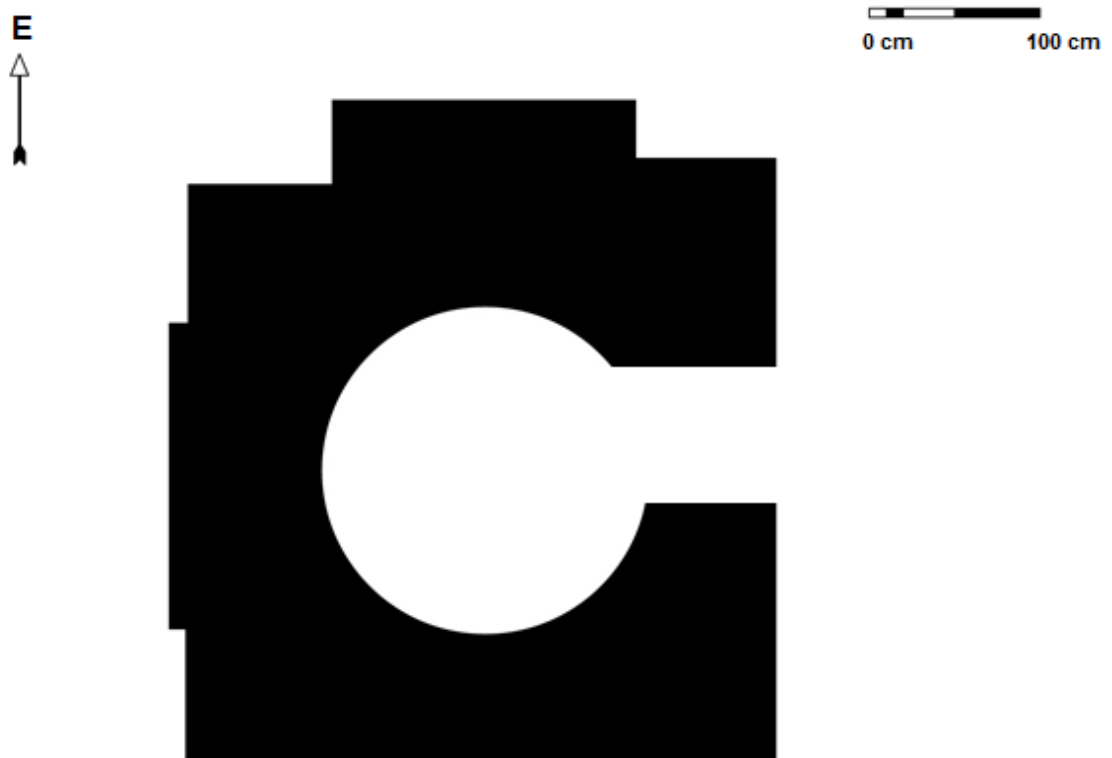


Fig. 2.9.1 – Eđri minaret ground plan © R. McClary

³⁹ Tunçoku and Caner-Saltık (2006), p.1889. Testing of the same phenomena in 7th/13th century mortar of the Hoca Hasan mescid minaret in Konya showed it to be Micritic Calcite (CaCo₃) derived from previously slaked and re-carbonated lime.

⁴⁰ Ousterhout (1999), p.128. Lime mortar was standard in Byzantine architecture, as was the use of pebbles, which are seen in the Eđri sample.



Fig. 2.9.2 – Eğri minaret, Aksaray (616-634/1220-1237) © R. McClary



Fig. 2.9.3 – Eđri minaret base brick and mortar erosion detail © R. McClary

Appendix 2.10: Kesik Minare mosque minaret, Aksaray

Location: Lat: 38°22'29" N Lon: 034°01'10" E

Date: c. 618/1220

Documented: September 2013

Builder: Anonymous

Structure: Brick minaret with twelve-sided zone of transition and a truncated shaft.

Medium: Brick, stone, mortar and glazed tile

Unlike other contemporary minarets in Anatolia, which generally feature stone lower sections of the base, the base as well as the shaft and zone of transition of the Kesik (cut) minaret is brick, with the exception of one block in the north-west corner (fig. 2.10.1) The top of the base steps out three times to create the platform supporting the unique twelve-sided zone of transition that is thirteen courses high. The door is west facing (246°), and the corner bricks measure c. 19.5cm x 10cm x c. 4.5cm-5cm. The nearly square base features sides of irregular length, with the north side measuring 219.5cm, the east 176cm, and the west 192cm.⁴¹

The shaft is only slightly (c. 1cm all round) smaller than the twelve-sided section upon which it sits (fig. 2.9.1). Above, the balcony has a truncated appearance and the decoration of the shaft ends abruptly. The absence of any door in the upper section of the shaft above the balcony indicates that there was originally a further balcony that is now missing. There are numerous later Ottoman examples of multiple balconies in Anatolia, as well as several much earlier Saljūq examples in Iran⁴² but if, as appears likely, there was a further section of shaft with another balcony, it would have made the Kesik minaret the earliest example of a multiple balcony minaret in Anatolia. The lower section of the upper shaft features the common wide rising and narrow bed mortar and half offset brick bond, while the upper portion features a similar style of Kufic epigraphy as the lower shaft.

⁴¹ It was not possible to measure the south side due to the wall of the new mosque, attached in 1965.

⁴² The finest example is the Sārabān minaret in Iṣfahān. See Hillenbrand (1994), p.154, fig. 108.

The rather crudely formed twelve-sided section is not centred on the base (fig. 2.9.3). The projecting cornice of the south-west corner of the base indicates that the minaret was originally freestanding. Meinecke disagrees⁴³ and assumes it was connected to the north-east corner of a now lost mosque. Extensive repairs mean his observations may hold more weight as he presumably observed the structure prior to what appears to be a quite recent restoration.

The use of the diagonal square Kufic epigraphy, seen in the tympanum of the tomb of ‘Izz al-Dīn in Sivas, as well as the unusual use of a twelve-sided zone of transition, (a form used for the upper section of the same tomb) indicate that this minaret may well be a sort of *homage* to the royal tomb. There is also the use of green glazed *cavetto bacini* in a band below the muqarnas, as seen on the (presumably) sultanic minaret of the Great Mosque in Sivas as well. The minaret also features muqarnas and V-shaped projections in a similar manner to the Sivas Great Mosque minaret (fig 2.10.2). Meinecke notes the similarities between the Aksaray minaret and the Sivas tomb. He also points out the similarity between the diagonal square Kufic epigraphy on the shaft, and that on the minarets of the Çifte Minareli madrasa (670/1271-2) in Sivas.⁴⁴ It is the similarities to the Sivas tomb and Great Mosque minaret, but the smaller scale and more provincial quality of execution, that suggest a date sometime after 618/1220 for the minaret.

The minaret features a number of glazed elements. The rather angular muqarnas corbels for the balcony feature polygonal turquoise tiles and inset circular deep *cavetto* green glazed sections (fig. 2.10.2). There is a band of green *cavetto* bowls at the base of the muqarnas, as seen on the Great Mosque minaret in Sivas (609/1212-13), however most are missing and the remaining mortar voids have recently been painted green. Square tiles are recessed into the buff brickwork of the upper and lower shaft to create square Kufic lettering (fig. 2.10.1), the meaning of which remains elusive. In regard to the mortar, the minaret has been repointed, and the interior was inaccessible, so close observation of the mortar bed was not possible.

⁴³ Meinecke (1976), Vol. 2, fig.2.

⁴⁴ *Ibid.*, p.10.

Alongside the brief comments by Meinecke,⁴⁵ the minaret has also been briefly addressed by Erdmann.⁴⁶



Fig. 2.10.1 – Kesik Minare mosque minaret, Aksaray (c. 618/1220) © R. McClary

⁴⁵ *Ibid.*, pp.9-10.

⁴⁶ Erdmann (1963), p.164.



Fig. 2.10.2 – Kesik Minare mosque minaret, Aksaray; balcony detail © R. McClary

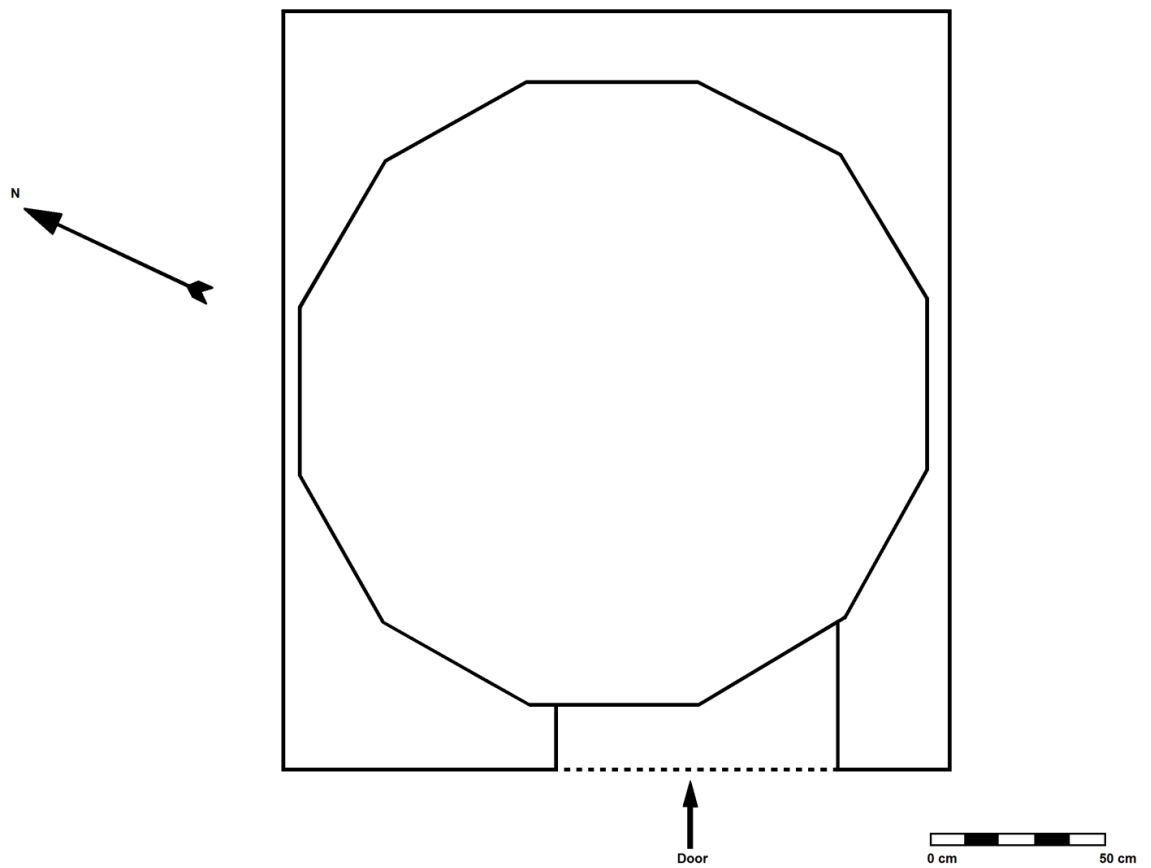


Fig. 2.10.3 – Kesik Minare mosque minaret, Aksaray; ground plan © R. McClary

Appendix 2.11: Konya marble portal epigraphy

A: Citadel mosque portal epigraphy over door⁴⁷

- 1 بسم الله و السلام على رسول الله نم هذا بيت الله السلطن المعظم علاالدنيا
- 2 و الدين ابو الفتح كيقباز كيخسرو بن قلج ارسلان بن مسعود
- 3 ناسر ا مير المؤمنين على يد العبد الفقير المحتاج الى رحمة الله اباز منو لى الاتابكى سنة
سبع عشر و ستمايه

B: Büyük Karatay portal *ḥadīth* epigraphy around door frame⁴⁸

Right side

- 1 الاعمال بالنيات
- 2 و المجالس بالامانات
- 3 المستشار المؤ عن
- 4 العدة عظة
- 5 العدة دين
- 6 الحرب خدعة
- 7 الندم توبة
- 8 الجماعة رحمة
- 9 الفرنة عذاب
- 10 الامانة غنى
- 11 الدين النصيحة

⁴⁷ Konyalı (1964), p.299

⁴⁸ *Ibid.*, pp.847-8.

Left side

- 1 الهم نفس الهرم
- 2 الخير عادة
- 3 الشر لاجاة
- 4 المسماح رباح
- 5 المسرو شوم
- 6 الحزم سوء الظن
- 7 الولد مبخلة مجبنة
- 8 البذام الجفا
- 9 القر آن هو الدواء

Top

- 1 الحسن المال
- 2 الكرم التقوى
- 3 السلام قبل الكلام
- 4 السؤال نصف العالم
- 5 الدعا هو العبادة
- 6 الدين شين الدين
- 7 النديب نصف العيش
- 8 التودد نصف العقل

Appendix 3.1: A unique series of incisions near Afyon

The Quraysh Baba tomb in Boyalı, near Afyon, built in the first decade of the 7th/13th century (fig. 3.1.1), features a series of incised circles on the wall of the interior. These unusual patterns appear to have been added after construction, as they cross the ashlar joints, and their purpose remains unclear. They are an unusual motif, and the only other published examples that have any similarity to them can be found on a house in Ani, and on the hospital in Divriği.⁴⁹ There are two examples, both located to the left of the door, at eye height. The group nearest the door has four smaller circles, one of which consists of two concentric circles, with the inner one divided into thirteen pie-shaped sections, along with a larger circle. The second example is a little to the left and is carved into a single ashlar. It consists of a smaller and a larger concentric circle (fig. 3.1.2). The circles were all incised with a pointed tool, presumably a compass, given the point in the centre. As they are such an uncommon motif it is hard to understand what they were incised for, but they are carefully executed.

Another unusual feature of the tomb is the means of transition from the octagonal stone walls to the circular brick inner dome. A single proto-muqarnas block, coupled with two very shallow incised blocks in the course above, is all that is used to make the transition (figs. 3.1.3 and 3.1.4)

⁴⁹ See Bakırer (1999), pp.42-69 for a rather inconclusive attempt to explain the function or meaning of the patterns in Ani and Divriği. The more complex example, in Divriği, (*ibid.*, p.61, fig.14a) may represent a plan of the proportions of the north portal of the mosque there but the others remain unexplained.



Fig. 3.1.1 – Quraysh Baba tomb, Boyalı, Afyon (c. 606/1209-10) © R. McClary



Fig. 3.1.2 – Incised circles inside Quraysh Baba tomb, Boyalı, Afyon © R. McClary



Fig. 3.1.3 –Quraysh Baba tomb, Boyalı, Afyon; dome transition from stone to brick
© R. McClary



Fig. 3.1.4 – Quraysh Baba tomb, Boyalı, Afyon; transition block © R. McClary

Appendix 3.2: Craftsmen named in epigraphy to 617/1220

City	Name	Date (CE)	Building/Object	Location	Material	Source
Siirt	Hajjī Ismaʿīl	1128-29	Minaret	Great Mosque	Stone	Meinecke (1976), Vol. 1, p.188
Aksaray	Hwāgā Nūstakīn al-Gamālī	1153-54	Minbar	Great Mosque	Wood	Rogers (1976), p.101
Konya	Mengī birtī al-ḥajjī al-Akhlātī	1155	Minbar	Citadel mosque	Wood	Redford (1991), p.56
Divriği	Ḥasan ibn Pīrūz al-Marāghī	1180-81	Citadel mosque	Portal		Pancaroglu (2013), p.32
Aksaray	Tūtbeg ibn Bahrām al-Khilātī	c.1190	Alay han	Top of portal (R)		Pancaroglu (2013), p.41
Kemah	ʿUmar ibn Ibrāhīm al-Ṭabarī	1191	Mengücek Gazi tomb	Top of NE facet	Stucco	Meinecke (1976), Vol. 1, p.188
Divriği	Tūtbeg ibn Bahrām al-Khilātī	1196-97	Sitte Melik tomb	Portal facet	Stone	Pancaroglu (2013), pp.39-41
Ankara	Ibrāhīm ibn Abī Bakr al-najjār	1197	Minbar	Alaeddin Mosque	Wood	Sauvaget and Wiet (1937), Vol. 8, p.218
Konya	Yūsuf ibn ʿAbd al-Ghaḥfār al-Marghī	c.1197	Kılıç Arslān II tomb	Above NE window	Stone	Meinecke (1976), Vol. 1, p.188
Tercan	Abū l-Namā ibn Mufaḍḍal al-Aḥwal al-Khilātī	c.1200	Mama Khātūn tomb enclosure	Portal	Stone	Ünal (1968), p.142
Siirt	ʿAlī ibn Abī Bakr	1214-15	Minbar	Great Mosque	Wood	Meinecke (1976), Vol. 1, p.189
Siirt	ʿAlī ibn ustād ʿUmar	1214-15	Minbar	Great Mosque	Wood	Meinecke (1976), Vol. 1, p.189
Siirt	ʿUmar ibn Saih ʿUthmān	1214-15	Minbar	Great Mosque	Wood	Meinecke (1976), Vol. 1, p.189
Siirt	Muḥammad ibn Saih ʿUthmān	1214-15	Minbar	Great Mosque	Wood	Meinecke (1976) Vol 1 p189
Konya	Ramaḍān ibn Kunis al-Qaysarī	1215	Taş mosque		Stone	Sonmez (1995), p.200
Sinop	Mūbariz al-Dīn Aqsha (Kayseri)	1215	City walls		Stone	Redford (2010), p.131
Sinop	Abū ʿAlī al-Ḥalabī ibn al-Kattānī	1215	City walls	Lonca gate	Stone	Redford (2010), p.131
Sinop	Sebastos (Greek)	1215	City walls		Stone	Redford (2010), p.131
Sinop	Najm al-Dīn Yuvāsh al-Bahāʾī (Kayseri)	1215	City walls		Stone	Redford and Leiser (2008), p.115
Konya	Muḥammad ibn Khawlān al-Dimashqī	1219-20	North portal	Citadel mosque	Marble	Redford and Leiser (2008), p.115
Sivas	Aḥmad ibn Abī Bakr al-Marandī	1220	ʿIzz al-Dīn tomb	Above façade window (S)	Glazed tile	Mayer (1956), p.41
Niksar	Aḥmad ibn Abī Bakr al-Marandī	c.1220	Kırk Kızlar tomb	Above window	Glazed tile	Mayer (1956,) p.41
Konya	Karīm al-Dīn Ardīshāh	1220-21	Citadel mosque		Glazed tile	Meinecke (1976) Vol 1 p.188

Appendix 4.1: A marble unicum in Konya

As a corollary to the argument introduced in chapter four, that ‘Izz al-Dīn planned the hospital complex in Sivas to be the site of his tomb rather than it being added by his successor, it is necessary to address briefly the issues around a tomb in Konya. It has been argued that it is the unfinished structure that ‘Izz al-Dīn intended to be his tomb,⁵⁰ so a brief overview is included, even though the following argument makes the case for it falling outside the chronological scope of this study. The structure is located in the courtyard of the citadel mosque in Konya, and is unique in the Rūm Saljūq funerary tradition in that it is faced entirely with marble (fig. 4.1.1).⁵¹ It is also unusual in its incorporation of Byzantine funerary spolia on a Muslim tomb. The plan of the tomb (fig. 4.1.2) replicates that of the tomb of Kılıç Arslān II, located immediately to the east, but with the addition of a large window opening in the east and west facets.⁵²



Fig. 4.1.1 – Unfinished marble tomb, Konya (c. 644/1246) © R. McClary

⁵⁰ Redford (1991), p.69. Redford adopts the arguments put forward by M.K. Oral in *Yıllık Araştırmalar Dergisi I* (1956). Önkol (1996), p.68 also attributes the tomb to ‘Izz al-Dīn, based on the epigraphy on the exterior of the north wall of the mosque enclosure.

⁵¹ *Ibid.*, p.69.

⁵² See *ibid.*, p.61, fig.1 for a plan of the Kılıç Arslān II tomb and the broader context of the two funerary structures.

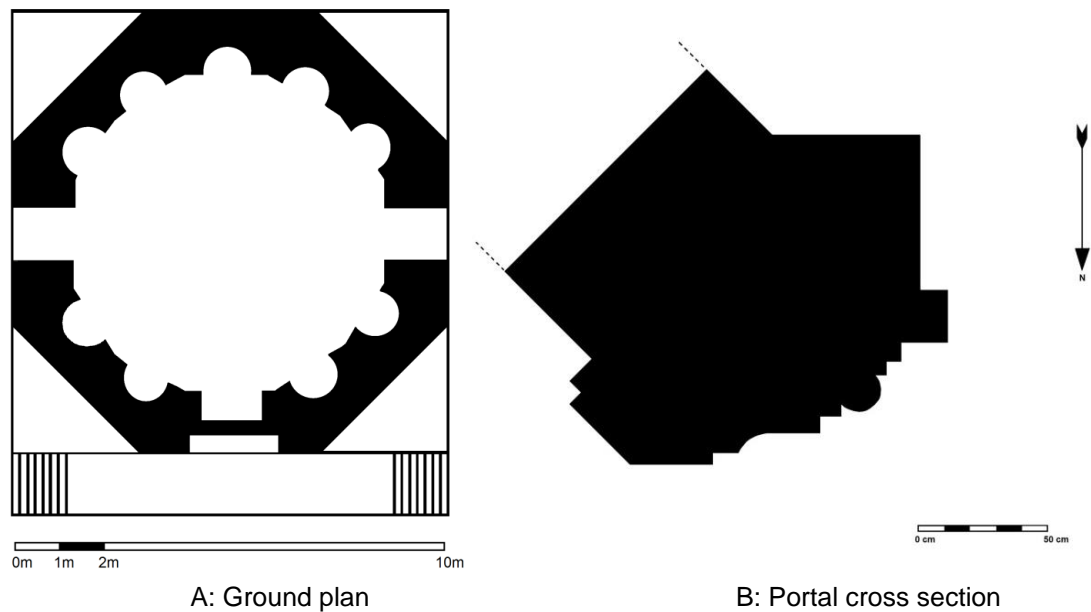


Fig. 4.1.2 – Unfinished marble tomb, Konya, plan and portal cross section © R. McClary

The inscription panel that is set into the north façade of the mosque enclosure employs the Aleppine-style strapwork decoration of the nearby portal and features a narrow centred shouldered arch. These are both features seen in the architecture of the period of ‘Izz al-Dīn, and might be expected to have been incorporated into the tomb as well. What the panel does not feature are cushion voussoirs in the manner of those seen on the tomb (fig. 4.1.3). The first line of the inscription describes ‘Izz al-Dīn Kay Kāwūs I taking credit for building the mosque and tomb (*hadha ‘l-masjid wa’t-turba*).⁵³ As the mosque and a tomb were already present prior to his rule it must be assumed that the epigraphy refers to a restoration and reconstruction of the site, rather than a completely new foundation. Had he been responsible for the unfinished tomb as well, the epigraphy would be expected to refer to tombs in the plural. As there are no inscriptions on the structure, it is on stylistic clues that attention must be focused.

⁵³ Redford (1991), p.56 discusses the inscription. *Ibid.*, p.74 has a transcription of the full text in Arabic, as does Önköl (1996), p.68 along with a Turkish translation. For details of the tomb, including measurements and an elevation see *ibid.*, pp.63-69.



Fig. 4.1.3 – Inscription panel on the north façade of the Citadel Mosque, Konya
© R. McClary

The use of the cushion voussoir on the Konya tomb was not an innovation in Islamic architecture; an earlier example is found on the blind arches flanking the external entrance to Bāb al-Futūḥ (c. 480/1087) in Cairo (fig. 4.1.4 A),⁵⁴ but it is not a motif found in the earlier architecture of Anatolia. The cushion voussoirs, capitals and engaged columns are very similar to a panel which was set into one of the towers of the defensive walls of Antalya, dated to 642/1244 (fig. 4.1.4 B).⁵⁵

⁵⁴ The Siculo-Norman Cathedral in Palermo also has the same feature over a number of windows, a feature most likely to be a result of the presence of Fāṭimid craftsmen in Palermo in the 6th/12th century.

⁵⁵ The panel is now located in the Antalya Museum. Redford (1993), p.153, fig. 8 reproduces a view published in 1836 by de Laborde which shows similar panels set into the walls of Konya with what appear to be cushion voussoirs as well.



A: Bāb al-Futuh, Cairo (c.480/1087)

B: Marble panel formerly set into Antalya city walls (642/1244)

Fig. 4.1.4 – Cushion voussoirs © R. McClary

It is noteworthy that there is an absence of any earlier dated examples, indicating that the two marble elements, the Antalya panel and the Konya tomb, may be contemporaneous with each other.⁵⁶ Following this logic, it seems more likely that the construction of the tomb was stopped as a result of the Mongol victory at Köse Dağ, and the concomitant loss of power and revenue that the Rūm Saljūq sultan suffered.⁵⁷ If this was the case, then the patron is likely to have been the sultan who died a few years after the battle at Köse Dağ, namely Ghiyāth al-Dīn Kay Khusraw II (d. 644/1246).⁵⁸ He was succeeded by his weak youngest son, ‘Izz al-Dīn Kay Kāwūs II, at the behest of the Vizir Shams al-Dīn al-Iṣfahānī. The new sultan was unlikely to have been in much of a position to complete the structure, given the economic and political upheaval that followed the Mongol victory.⁵⁹

⁵⁶ It is of course possible that the panel in Antalya is a later copy of elements of the tomb façade, in the way that it clearly references the strapwork decoration of the nearby north portal of the mosque enclosure.

⁵⁷ Cahen (2001), p.177.

⁵⁸ Bosworth (1996), p.213.

⁵⁹ See Cahen (2001), chapter 16 for an overview of the political and financial consequences for the Rūm Saljūq sultans of the loss at Köse Dağ.

Appendix 4.2: Geometric pattern design process

The process of designing one of the patterns employed on the tomb of ‘Izz al-Dīn Kay Kāwūs I in Sivas has been drawn out in seven stages by Bakırer.⁶⁰ The underlying simplicity of the pattern is revealed by the interconnected circles in fig. 4.2.1.

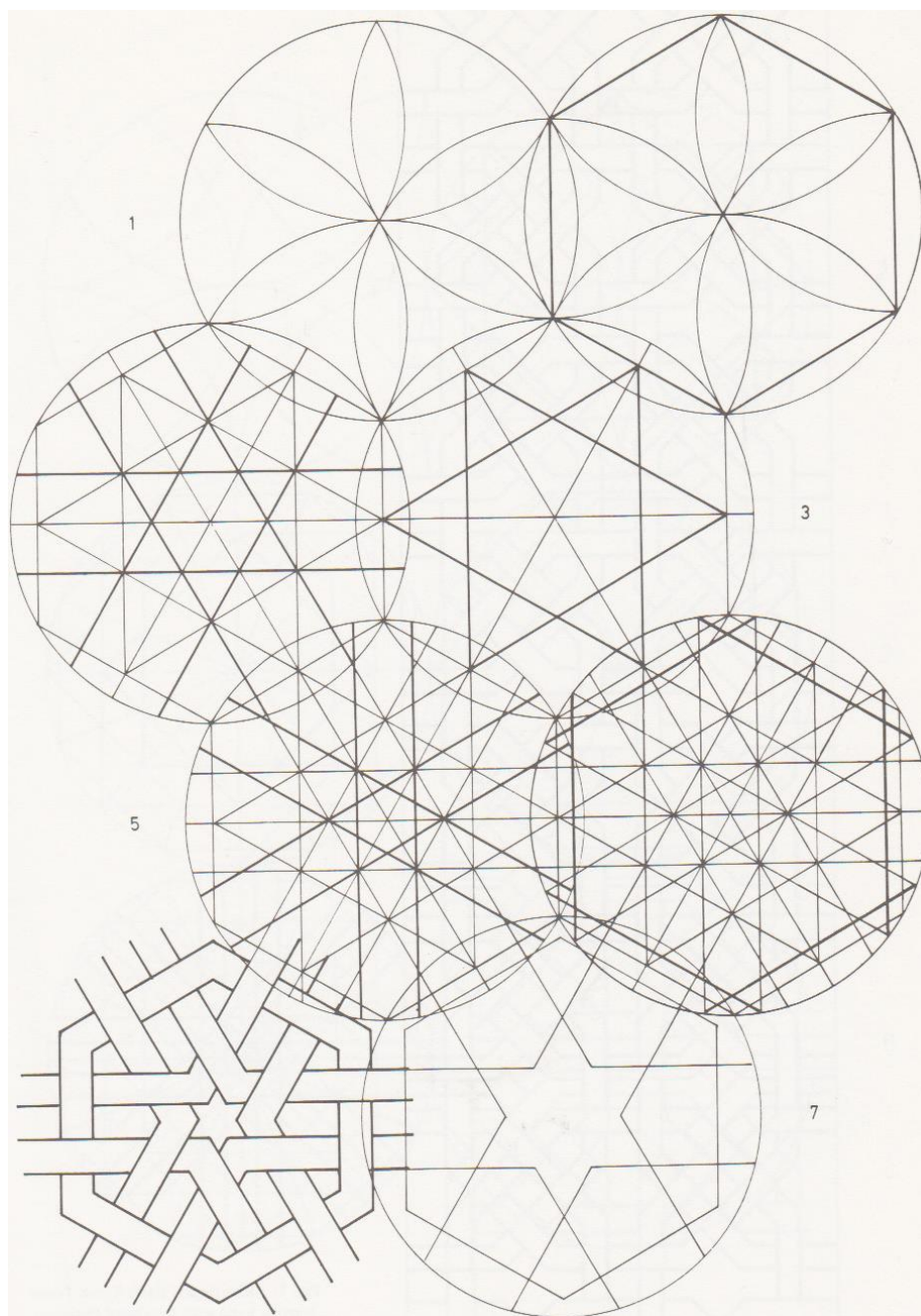


Fig. 4.2.1 – ‘Izz al-Dīn Kay Kāwūs I tomb; geometry design (after Bakırer (1983) p.105, fig.6)

⁶⁰ Bakırer (1983), p.105, fig.6.

Appendix 4.3: Analysis of the three ‘Izz al-Dīn Kaykāwūs I tomb façade recess panels in Sivas

There are three recessed panels on the tomb façade, one in the centre, one to the west, featuring the craftsman’s signature in two cartouches, and another panel to the east. All three feature pointed arches and decorated spandrels. Without exception all the glazed elements are turquoise.



Fig. 4.3.1 – Panels above west (r) window of tomb façade © R. McClary

The west panel (fig. 4.3.1) features three basic elements to the composition: glazed turquoise tiles; unglazed brick sections; and a plain white plaster base, into which the separate sections are set. There are small kite-shaped and Y-shaped glazed tiles, along with the long, thin glazed rectangles with angled ends that form the strapwork shape and outer border.

The outermost geometric element consists of a glazed turquoise strapwork decagon. The main decoration consists of strapwork interlace that is based on a decagon, but instead of meeting at the ten points, the strapwork lines turn inward 70 degrees until they are in line with the next tip of the decagon, at which point the line turns 35 degrees and returns to the decagonal form. The turning point of the unglazed strapwork on the inside of the pattern is the contact point with the five kite-shaped glazed tiles, which are set together to form the central five-pointed star. Within the centre of that star there is a small void, in the form of another five-pointed star, because of the kite-shaped form of the glazed tiles.

The 70 degree and 35 degree turns, as well as leaving alternate corners of the decagon missing, also form the Y-shaped patterns that can be discerned in the composition. Their rather unclear form is reinforced by the placing of small glazed tiles of the same Y-shape near each of the five actual points of the underlying decagon that are delineated by the unglazed strapwork. The composition is completed by the addition of five partial repeats of the main decagonal strapwork, located at the other five (broken) corners of the decagon, at the mid-point between where the two strapwork bands make their 70 degree turns.

The panel to the east (fig. 4.3.2) is very similar to the west one, but with a few minor differences, which give it a rather different overall appearance. It has the same glazed outer decagon, but instead of the broken unglazed inner decagon on the west panel, the east has a complete, glazed decagon. As a result of the strapwork pattern being different, there are no Y-shapes created, and thus no space or need for the small glazed Y-shaped tiles seen to the west. At the point where the unglazed knotwork lines extend beyond the smaller glazed decagon, the pattern differs from the west panel, and the lines extend through the area where the glazed Y-shaped tiles are set in the west panel. Where the west has two signature cartouches, in the lower left and lower right, the east panel has the upper three-quarters of glazed kite-shaped tiles arranged to create a five-pointed star. This star is identical to the one in the middle of the west panel. A similar form may be seen in the centre of the east panel, but the centre of each of the kite-shaped glazed tiles that make up the star have the centres cut out, leaving tiny kite-shaped voids.



Fig. 4.3.2 – Panels above east (I) window of tomb façade © R. McClary

The central panel, over the door, differs from the two flanking ones in number of ways. Owing to the framing band of epigraphy (fig. 4.3.3) the recessed area is smaller than the other two. It also has a different form, being recessed by a *cavetto*, similar to the style employed in stone for Fāṭimid architecture in Egypt, such as at the al-Aqmar mosque in Cairo (begun 516/1122).⁶¹ The underlying design consists of seven full and two partial hexagons, in three rows. The top row has two, the bottom three, with two full on the bottom, along with the partial ones at each end. All the

⁶¹ See Bloom (2007), pp.139-45, especially figs.105-109. The small, stone-built mosque has a tripartite façade, a form which is repeated in the courtyard access to the prayer hall. Although the central pointed-arch panel of the façade has a *cavetto* edge, it is ribbed rather than decorated with strapwork, making this a formal rather than a decorative comparison.

strapwork lines that make up the central hexagon are in glazed sections, with the rest of the composition being unglazed.

All three panels feature decorative spandrels. The east panel has a “crowsfoot” tripartite pattern in the spandrels which is, like the slightly different pattern in the west panel, framed with a glazed turquoise border. They are very similar to the pattern seen in the spandrels of the niches in the north iwan of the Sivas hospital, but lack the glazed elements and the incised patterns seen in the iwan niches. The earliest surviving example of this type of spandrel decoration can be seen on the north entrance of the Gunbad-i Surkh, the earliest surviving square-plan tomb in Marāgha (542/1148).⁶² The decoration employed in the spandrels of the west panel is also made up of interlocking tripartite patterns, but in these cases, each arm consists of a kite-shaped area, not unlike the glazed tiles used to make the central five-pointed star. A similar, but not identical, pattern is used in the central panel spandrels, but they do not feature a glazed border.



Fig. 4.3.3 – Blind panel above door of tomb façade © R. McClary

⁶² See Godard (1936), pp.131-134 and Pope (1939), Vol. IV, pls. 341 A and B.

**Appendix 4.4: Sectional drawing of the ‘Izz al-Dīn
Kaykāwūs I hospital south *riwāq* star vault (west)**

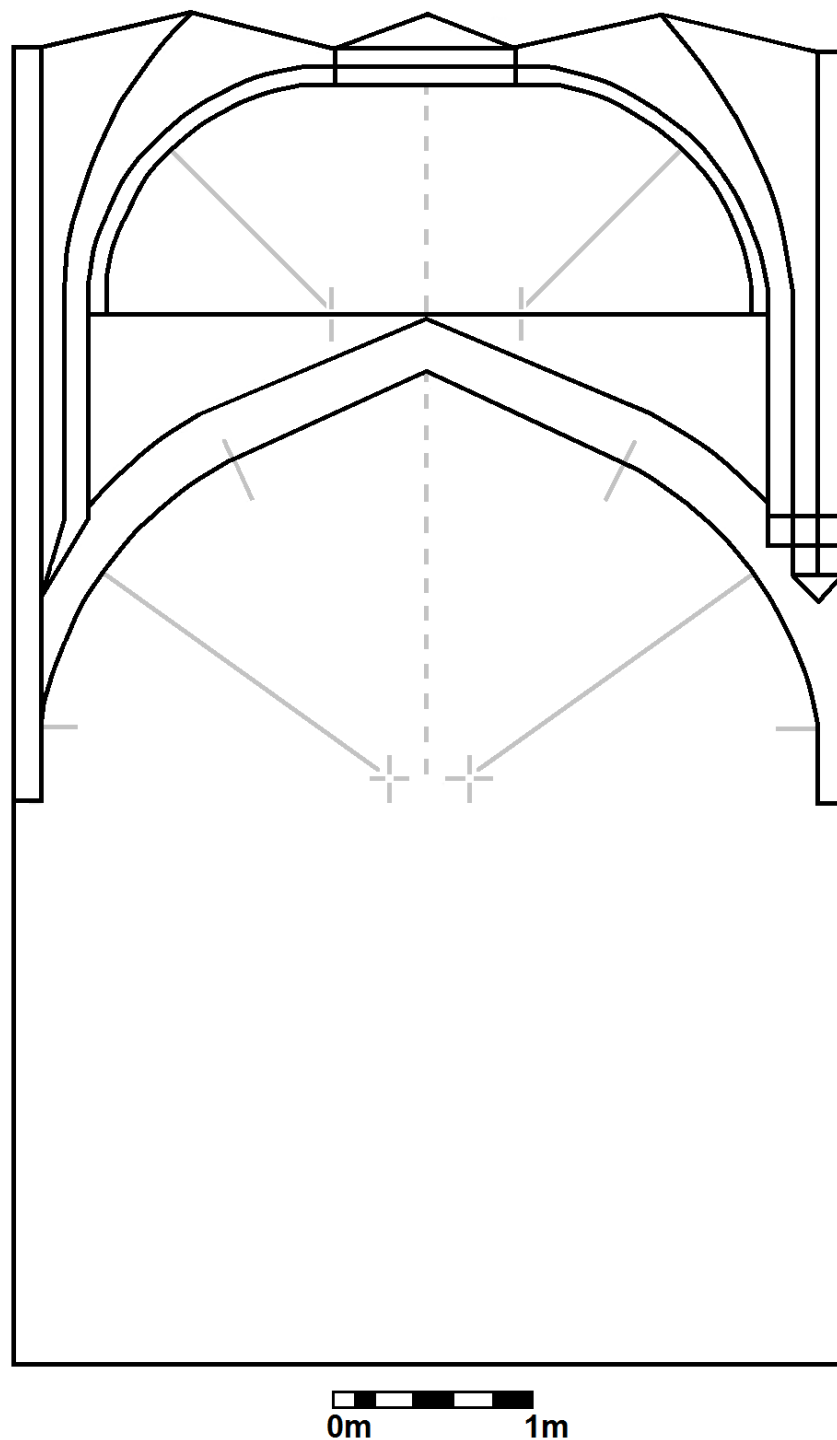


Fig.4.4.1 – South *riwāq* star vault (west)⁶³ © R. McClary

⁶³ Based on Yavuz (1993), p.178.

BIBLIOGRAPHY

Introductory note

This bibliography consists of all the works cited in the thesis, works that were consulted but not deemed relevant to cite have been omitted.

Abdel Haleem, M. A. S. (tr.) *The Qur'an*, Oxford (2005)

Akurgal, E. K. *The Art and Architecture of Turkey*, New York, NY (1980)

Allan, J. W. "Abū'l Qāsim's Treatise on Ceramics", *Iran*, Vol. 11 (1973), pp.111-120

Allen, T. *A classical revival in Islamic Architecture*, Wiesbaden (1986)

Alpago-Novello, A. *Art and Architecture in Medieval Georgia*, Louvain-La-Neuve (1980)

Anisi, A. "The Friday Mosque at Simnan", *Iran*, Vol. 44 (2006), pp.207-228

Arnold, A. and Zehnder, K. "Monitoring Wall Paintings Affected by Soluble Salts", in Cather, S. (ed.) *The Conservation of Wall Paintings; Proceedings of a symposium organised by the Courthauld Institute of Art and the Getty Conservation Institute, London July 13-16, 1987*, Los Angeles, CA (1991) pp.103-135

Arik, O. "Tiles in Religious and Public Buildings of the Anatolian Seljuk and Beylik Periods", in Arik, R. and Arik, O. *Tiles: Treasures of Anatolian Soil: Tiles of the Seljuk and Beylik Periods*, İstanbul (2008) pp.37-189

---- "‘Turbe’ Forms in Early Anatolian-Turkish Architecture", *Anadolu XI* (1967), pp.101-119

Arik R. "Tiles in Anatolian Seljuk Palace Architecture ", in Arik, R. and Arik, O. *Tiles: Treasures of Anatolian Soil: Tiles of the Seljuk and Beylik Periods*, İstanbul (2008) pp.219-398

---- "Architectural Tiles from the Kubad-Abad Excavations" in Böhlendorf-Arslan, B., Uysal, A. O. and Witte-Orr, J. (eds.) *Çanak, Late Antique and*

Medieval Pottery And Tiles In Mediterranean Archaeological Contexts, BYZAS 7, İstanbul (2007), pp.489-500

Ashkan, M. "Discontinuous Double-shell Domes through Islamic eras in the Middle East and Central Asia: History, Morphology, Typologies, Geometry, and Construction", in *Nexus Network Journal*, Vol. 12, No. 2 (2010), pp.287-319

Ashurst, J. and Ashurst, N. *Practical building conservation. English Heritage Technical Handbook Vol. 2: Brick, Terracotta & Earth*, Aldershot (1988)

---- *Practical building conservation. English Heritage Technical Handbook Vol. 3: Mortars, Plasters & Renders*, Aldershot (1988)a

Aslanapa, A. *Turkish Art and Architecture*, London (1971)

Bachmann, W. *Kirchen und Moscheen in Armenien und Kurdistan*, Leipzig (1913)

Bakir, B. and Basagaoğlu, I. "How Medical Functions Shaped Architecture in Anatolian Seljuk Darüşşifas (hospitals) and Especially in The Divriği Turan Malik Darüşşifa", *Journal for the International Society for the History of Islamic Medicine*, Vol. 5 (2006), pp.64-82

Bakırer, Ö. "A study on the use of brickbonds in Anatolian Seljuk architecture" in *M.E.T.U Journal of the Faculty of Architecture*, Vol. 6, No. 2 (1980), pp.143-181

---- "Geometric Aspects of Brickbonds and Brick Revetments in Islamic Architecture", in Germen, A. (ed.) *Islamic Architecture and Urbanism*, Dammam (1983), pp.87-120

---- "The Story of Three Grafitti", *Muqarnas* XVI (1999), pp.42-69

Bakırer, Ö. and Caner, Ç. "Anatolian Seljuk Portals in Medrese and Mosque Architecture", *Türkiyat Araştırmaları*, Yıl:6, Sayı:10, Ankara (2009), pp.13-30

Barry, M. *Colour and Symbolism in Islamic Architecture: Eight Centuries of the Tile-Makers Art*, London (1996)

Barthold, W. *Turkestan down to the Mongol Invasions, Third edition*. London (1968)

Bates, M. L. and Darley-Doran, R. E. "The Art of Islamic Coinage", in Falk, T. (ed.) *Treasures of Islam*, London (1985), pp.350-395

Başar, M. E. "Sivas'daki Selçuklu Minareleri", in *Selçuklular Döneminde Sivas*, Sivas (2006) pp.427-444

Bayat, A.H. "Sivas Darüşşiafsı'nın bilinen ve bilinmeyen kitableri", in *Selçuklular Döneminde Sivas*, Sivas (2006), pp.351-365

Bayrak, Y., Çınar, H. and Bayrak, E. "The North Anatolian Fault Zone: An Evaluation of Earthquake Hazard Parameters" in Schattner, U. (ed.) *New Frontiers in Tectonic Research – At the Midst of Plate Convergence*, Rijeka, Croatia (2011), pp.269-288

Behrens Abouseif, D. "Muqarnas", in *The Encyclopaedia of Islam, New Edition, Vol. 7*, Leiden (1993), pp.501-506

---- *Cairo of the Mamluks: A History of the Architecture and its Culture*, London (2007)

Beihammer, A. D. "Defection across the Border of Islam and Christianity: Apostasy and Cross-Cultural Interaction in Byzantine-Seljuk Relations", *Speculum, A Journal of Medieval Studies*, Vol. 86, No. 3 (2011), pp.597-651

Bell, L. (ed.) *The Letters of Gertrude Bell*, London (1927)

Biçer Özkun, Ü. "Selçuklu mimarisinde malzeme kullanımı ve Sivas minarelerinin malzeme değerlendirmesi", in *Selçuklular Döneminde Sivas*, Sivas (2006), pp.501-510

Bier, C. "The Decagonal Tomb Tower at Maragha and Its Architectural Context: Lines of Mathematical Thought", *Nexus Network Journal*, Vol. 14, Issue 2 (2012), pp. 251-273

Bilget, H. B. *Izzeddin Keykavuz Darüşşifası*, Ankara (1990)

Bilici, Z. K. "Bronze Door Knockers of Cizre Great Mosque, A New Example", in Compreti, M., Raffetta, P. and Scarcia, G. (eds.) *Ērān ud Anērān*, Venice (2006), pp.111-122

Black, A. *The History of Islamic Political Thought From the Prophet to the Present*, Edinburgh (2011)

Blair, S. S. "A Brief Biography of Abu Zayd", in *Muqarnas*, Vol. XXV (2008), pp.155-176

---- *Islamic Inscriptions*, Edinburgh (1998)

---- "The Madrasa at Zuzan: Islamic Architecture in Eastern Iran on the Eve of the Mongol Invasions", *Muqarnas*, Vol. III (1985), pp.75-91

Blessing, P. "Friedrich Sarre and the discovery of Seljuk Anatolia", *Journal of Art Historiography*, No. 11 (2014)a, pp.1-11

---- *Rebuilding Anatolia after the Mongol Conquest: Islamic Architecture in the Lands of Rūm, 1240–1330*, Farnham (2014)b

Bloom, J. M. *The Minaret*, Edinburgh (2013)

---- *Arts of the City Victorious, Islamic Art and Architecture in Fatimid North Africa and Egypt*, London (2007)

---- *Paper Before Print: The History and Impact of Paper in the Islamic World*, New Haven, CT (2001)

---- et al. *The Minbar from the Kutubiyya Mosque*, New York, NY (1998)

---- *Minaret, Symbol of Islam*, Oxford (1989)

Bosworth, C. E. "Nakh*č*iwān", in Bosworth, C. E., Van Donzel, E., Heinrichs, W. P. and Pellat, C. (eds.) *The Encyclopaedia of Islam New Edition Vol. VII*, Leiden (1993), pp.922-923

---- *The new Islamic Dynasties, A chronological and genealogical manual*, Edinburgh (1996)

---- *The History of the Seljuq State: A translation with commentary of the Akhbār al-dawla al-saljūqiyya*, Abingdon (2011)

Bozer, R. "Forms of Seljuk Tile Panels, Observations on the Designs of Wall Coverings and Some Processes after Glazing", in Arık, R. and Arık, O. *Tiles: Treasures of Anatolian Soil: Tiles of the Seljuk and Beylik Periods*, İstanbul (2008), pp.191-207

Broug, E., *Islamic Geometric Design*, London (2013)

Brunskill, R.W. *Brick building in Britain*, London (1997)

Byron, R. *The Road to Oxiana*, London (1981) [First published 1937]

Burns, R. *Monuments of Syria*, London (1999)

Cahen, C. "Ayyūbids" in Lewis, B., Pellat, C. and Schacht, J. (eds.) *The Encyclopaedia of Islam, Second Edition Vol. I*, Leiden and London (1960), pp.796-807

---- "Kaykā'ūs" in van Donzel, E., Lewis, B. and Pellat, C. (eds.) *The Encyclopaedia of Islam New Edition Vol. IV*, Leiden (1978), p.813

---- "Kilidj Arslan II" in Van Donzel, E., Lewis, B. and Pellat, C. (eds.) *The Encyclopaedia of Islam New Edition Vol. V*, Leiden (1986), p.104

---- *The formation of Turkey: the Seljukid Sultanate of Rum: eleventh to fourteenth century*, New York, NY (2001)

----- "The Turkish Tribes in Western Asia During the Seljuqid period", in Bosworth, C. E. (ed.) *The Formation of the Classical Islamic World Vol. 9, The Turks in the Early Islamic World*, Aldershot (2007) pp.339-346

Canby, S. *The Golden Age of Persian Art 1501-1722*, New York, NY (2000)

Caner, E. *Archaeometrical investigation of some Seljuk plasters*, unpublished METU MSc Thesis, Ankara (2003)

- Carboni, S. "The Historical and Artistic Significance of the Minbar from the Kutubiyya Mosque", in Bloom, J. et al. (eds.) *The Minbar from the Kutubiyya Mosque*, New York, NY (1998), pp.41-66
- Carswell, J. *New Julfa: The Armenian Churches and Other Buildings*, Oxford (1968)
- Casimir, M. J. and Glatzer, B. "Šāh-i Mašhad, a Recently Discovered Madrasah of the Ghurid Period in Ġarġistān (Afghanistan)" *East and West*, Vol. 21 (March-June 1971), pp.53-68
- Çetintaş, S. *Sivas Darüşşifası 614-1217*, İstanbul (1953)
- Cevdet, M. "Sivas Darüşşifası vakfiyesi ve tercümesi", *Vakıflar Dergisi* I (1938), pp.35-38
- Charbonnier, J. M. "Les Visions Magiques de Nasser Khalili", *Beaux Arts Magazine*, No.136, (1995), pp.50-51
- Clifton-Taylor, A. *The Pattern of English Building*, London (1972)
- Combe, É. Sauvaget, J. and Wiet, G. (eds.) *Répertoire Chronologique d'Épigraphie Arabe Vol. 7*, Cairo (1937)
- Cortese, D. and Calderini, S. *Women and the Fatimids in the World of Islam*, Edinburgh (2006)
- Crane, H. "Notes on Saldjūq Architectural Patronage in Thirteenth Century Anatolia", *Journal of the Economic and Social History of the Orient*, Vol. 36, No. 1 (1993), pp.1-57
- "Anatolian Saljūq architecture and its links to Saljūq Iran", in Hillenbrand, R. (ed.) *The Art of the Saljūqs in Iran and Anatolia – Proceedings of a Symposium held in Edinburgh in 1982*, Costa Mesa, CA (1994), pp.263-268
- Crowe, Y. "Divriği: problems of geography, history and geometry", in Watson, W. (ed.) *The Art of Iran and Anatolia from the 11th to the 13th century A.D.*, London (1975), pp.28-39

Czeczott, H. *A Contribution to the Knowledge of the Flora and Vegetation of Turkey*, Berlin (1938/1939)

Dadoyan, S. B. *The Armenians in the Medieval Islamic World Vol. 2: Armenian Realpolitik in the Islamic World and Diverging Paradigms – Case of Cilicia Eleventh to Fourteenth Centuries*, Piscataway, NJ (2013)

Daneshvari, A. *A Stylistic and Iconographic Study of the Persian Tomb Towers of the Seljuk Period*, unpublished PhD thesis, University of California, Los Angeles, CA (1977)

---- *Medieval Tomb Towers of Iran, An Iconographic Study*, Costa Mesa, CA (1986)

Davis, P. H. (ed.) *Flora of Turkey and the East Aegean Islands Vol. 2*, Edinburgh (1967)

---- (ed.) *Flora of Turkey and the East Aegean Islands Vol. 7*, Edinburgh (1982)

Dold-Samplonius, Y. "Practical Arabic mathematics: measuring the muqarnas by al-Kāshī", *Centaurus*, Vol. 35, Issue 3 (1992), pp.193-242

Donabedian, P. and Thierry, J. M. *Armenian Art*, London (1989)

Duda, H. W. *Die Seltschukengeschichte des Ibn Bībī*, Copenhagen (1959)

Dunn, R. D. *The Adventures of Ibn Battuta: A Muslim Traveller of the Fourteenth Century*, Los Angeles, CA (1989)

Durand-Guédy, D. *Iranian Elites and Turkish Rulers; A history of Iṣfahān in the Saljūq period*, London / New York, NY (2010)

Eastmond, A. *Art and Identity in Thirteenth Century Byzantium: Hagia Sophia and the Empire of Trebizond*, Aldershot (2004)

Écochard, M. "Notes d'archéologie musulmane. I, Stéréotomie de deux portails du XIIe siècle", *Bulletin d'Etudes Orientales* 7-8 (1937-38), pp.98-112

Edgington, S. B. (ed. and tr.) *Albert of Aachen, Historia Ierosolimitana, History of the Journey to Jerusalem*, Oxford (2007)

Edwards, H. "Centralizing the Margins: Commemorative Architecture in the Indus Valley" in Lambah, A. N. and Patel, A. (eds.) *The Architecture of the Indian Sultanates (Marg, Vol. 58, No. 1)* Mumbai (2006), pp.18-29

Edwards, R. W. "Medieval Architecture in the Oltu-Penek Valley: A Preliminary Report on the Marchlands of Northeast Turkey", *Dumbarton Oaks Papers*, Vol. 39 (1985), pp.15-37

Eliséeff, N. "Khān" in Van Donzel, E., Lewis, B. and Pellat, C. (eds.) *The Encyclopaedia of Islam New Edition Vol. IV*, Leiden (1978), pp.1010-1017

El-Said, Issam and Parman, A. *Geometric Concepts in Islamic Art*, London (1976)

Erdmann, K. *Das Anatolische Karavanseray der 13 Jarhunderts*, Berlin (1961)

---- "Neue Arbeiten zur türkischen Keramik", *Ars Orientalis*, Vol. V (1963), pp. 191-219.

---- *Die Kunst Irans zur Zeit der Sasaniden*, Mainz (1969)

Erdmann, K. and Erdmann H. *Das Anatolische Karavanseray der 13 Jarhunderts, zweiter und dritter Teil. Bauenschreibung. Die Ornamente. Istanbuler Forschungen 31*, Berlin (1976)

Ertug, A. *The Seljuks: A journey through Anatolian Architecture*, İstanbul (1991)

Ettinghausen, E. "Woven in Stone and Brick: Decorative programs in Seljuk and post Seljuk architecture and their symbolic value", in *Turkish Art: 10th International Congress of Turkish Art Proceedings*, Geneva (1999), pp.315-325

Ettinghausen, R. and Grabar, O. *Islamic Art and Architecture 650-1250*, London (1987)

Faruqi, S. "Sīwās" in Bosworth et al (eds.) *Encyclopaedia of Islam, New Edition Vol. IX*, Leiden (1997), pp.689-90

Fletcher, E. F. "Turco-Mongolian monarchic traditions in the Ottoman Empire", in *Journal of Ukrainian Studies*, Vol. 3-4, Part 1 (1979-80), pp.236-51

Flood, F. B. *Objects of Translation: Material Culture and Medieval "Hindu-Muslim" Encounter*, Princeton, NJ and Oxford (2009)

Gabriel, A. *Monuments turcs d'Anatolie*, Paris (1934)

---- *Niğde Türk Anıtları*, Ankara (1962)

Gaprindashvili, G. *Ancient Monuments of Georgia: Vardzia*, Leningrad (1975)

Gibb, H. A. R. (Trans.) *Ibn Battuta: Travels in Asia and Africa*, London (1983)

Gink, K. and Turànszky, I. *Azerbaijan: Mosques, Turrets, Palaces*, Budapest (1979)

Gierlichs, J. "Das Mosul-Tor von 'Amadiya im Nordirak", *Baghdader Mitteilungen*, Vol. 26, Berlin (1995), pp.195-206

Godard, A. "Notes complémentaires sur le tombeaux de Marāgha", *Athār-é Īrān*, Vol. 1 (1936) pp.125-61

---- "D. Gurgān and the Gunbad-i-Qābūs", in Pope, A. U. (ed.) *A Survey of Persian Art, Vol. III*, Ashiya (1981), pp.967-974

Goodwin, G. "Anatolian Bridges of the Saljūq period", in Hillenbrand, R. (ed.) *The Art of the Saljūqs in Iran and Anatolia – Proceedings of a Symposium held in Edinburgh in 1982*, Costa Mesa, CA (1994), pp.269-277

Goshgarian, R. "Futuwwa in thirteenth-Century Rūm and Armenia: Reform Movements and the Managing of Multiple Allegiances on the Seljuk Periphery", in Peacock, A. C. S. and Yıldız, S. N. (eds.) *The Seljuks of Anatolia, Court and Society in the Medieval Middle East*, London (2013), pp.227-263

Grabar, O. *Jerusalem, Constructing the Study of Islamic Art, Vol. IV*, Aldershot (2005)

---- *The Mediation of Ornament*, Princeton, NJ (1992)

Hambly, G. R. G. "From Baghdad to Bukhara, from Ghazni to Delhi: The *khil'a* Ceremony in the Transmission of Kingly Pomp and Circumstance", in Gordon, S. (ed.) *Robes and Honour, The Medieval World of Investiture*, New York, NY (2001), pp.193-224

Hamilton, R. W. *The Structural History of the Aqsa Mosque; A record of archaeological gleanings from the repairs of 1938-1942*, London (1949)

Hattstein, M. and Delius, P. *Islam: Art and Architecture*, Cologne (2000)

Hazard, H. W. (ed.) *A History of the Crusades Vol. 4, The Art and Architecture of the Crusader States*, Madison, WI (1977)

Hill, D. R. (tr.) *The Book of Knowledge of Ingenious Mechanical Devices (kitāb fī ma'rifat al-ḥiyal al-handasiyya) by Ibn al-Razzāz al-Jazarī*, Dordrecht / Boston, MA (1974)

Hill, D. and Grabar, O. *Islamic Architecture and its Decoration A.D. 800-1500*, London (1964)

Hillenbrand, C. "Rāvandī, the Seljuk court at Konya and the Persianisation of Anatolian cities", *Mésogeios* 25-26 (2005), pp.157-169

---- *Turkish Myth and Muslim Symbol, The Battle of Manzikert*, Edinburgh (2007)

Hillenbrand, R. "Saljūq Monuments in Iran: II. The 'Pir' Mausoleum at Takistan", *Iran*, Vol. 10 (1972), pp.45-55

---- "The Development of Saljūq Mausolea in Iran", in Watson, W. (ed.) *The Art of Iran and Anatolia from the 11th to the 13th century AD, Percival David Foundation of Chinese Art Colloquium on Art and Archaeology in Asia 4 (25-28 June 1973)* London (1975), pp.40-59

---- "Saljūq dome chambers of North-West Iran" *Iran*, Vol. 14 (1976), pp.93-102

---- *Islamic Architecture; Form, Function and Meaning*, Edinburgh (1994)

---- "The architecture of the Ghaznavids and Ghurids", in Hillenbrand, C. (ed.) *Studies in Honour of Clifford Edmund Bosworth Vol. II, The Sultans Turret: Studies in Persian and Turkish Culture*, Leiden (2000), pp.124-207

---- "The Ghurid tomb at Herat" in Ball, W. and Harrow, L. (eds.) *Cairo to Kabul: Afghan and Islamic Studies presented to Ralph Pinder-Wilson*, London (2002), pp.123-143

---- "The Seljuq Monuments of Turkmenistan", in Lange, C. and Mecit, S. (eds.) *The Seljuqs; Politics, Society and Culture*, Edinburgh (2011), pp.277-308

Hinz, W. *Islamische Masse und Gewichte*, Leiden (1955)

Humphreys, R. S. "Political and Architectural patronage in Ayyubid Damascus" in Bosworth, C. E., Issawi, C., Savory, R. and Udovitch, A. L. (eds.) *The Islamic World from Classical to Modern Times: Essays in Honour of Bernard Lewis*, Princeton, NJ (1989), pp.151-174

---- "Women as Patrons of Religious Architecture in Ayyubid Damascus", *Muqarnas XI: An Annual on Islamic Art and Architecture* (1994), pp.35-54

Hutt, A. and Harrow, L. *Iran*, Vol. 1, London (1977)

Hutt, A. M. *The Development of the Minaret in Iran under the Saljūqs*, Unpublished M.Phil. thesis, The School of Oriental and African Studies, London University, London (1974)

Jackson, P. "The fall of the Ghurid Dynasty", in Hillenbrand, C. (ed) *Studies in Honour of Clifford Edmund Bosworth Vol. II, The Sultan's Turret: Studies in Persian and Turkish Culture*, Leiden (2000), pp.207-237

Jacobsthal, E. *Mittelalterliche Backsteinbauten zu Nachtschewân im Araxesthale: mit einer Bearbeitung der Inschriften von Martin Hartmann*, Berlin (1899)

Janabi, T. J. *Studies in Medieval Iraqi Architecture*, Baghdad (1982)

Kiani, M. Y. "Recent excavations in Jurjan, a summary", in Watson, W. (ed.) *The Art of Iran and Anatolia from the 11th to the 13th century AD*, Percival David Foundation of Chinese Art Colloquium on Art and Archaeology in Asia 4 (25-28 June 1973), London (1975), pp.126-133

Knobloch, E. *Monuments of Central Asia: A Guide to the Archaeology, Art and Architecture of Turkestan*, London (2001)

Knoop, D. and Jones, G. P. *The Mediaeval Mason*, Manchester (1967)

Konyalı, İ. H. *Âbideleri ve kitabeleri ile Konya Tarihi*, Konya (1964)

Köprülü, M. F. (Leiser, G. tr. and ed.) *Islam in Anatolia after the Turkish Invasion (Prologomena)*, Salt Lake City, UT (1993)

Korobeinikov, D. "The King of the East and the West': The Seljuk Dynastic Concept and Titles in the Muslim and Christian Sources", in Peacock, A. C. S. and Yıldız, S. N. *The Seljuks of Anatolia, Court and Society in the Medieval Middle East*, London (2013), pp.68-90

Kuban, D. *The Miracle of Divriği: An Essay on the Art of Islamic Ornamentation in Seljuk Times*, İstanbul (2001)

Kuehn, S. *The Dragon in Medieval East Christian and Islamic Art*, Leiden (2011)

Kuniholm, P. I. "Long Tree-Ring Chronologies for the Eastern Mediterranean" in Demirci, Ş. Özer, A. M. and Summers, G. D. (eds.) *Archaeometry '94: The Proceedings of the 29th International Symposium on Archaeometry*, Ankara (1996), pp.401-409

---- "Dendrokronoloji yöntemi ile tarih olmuş osmanlı antıları", in Baram, U. and Carroll, L (eds.), *Osmanlı Arkeolojisi*, İstanbul (2004), pp.100-141

Kuran, A. *Anadolu Medreseleri Vol. 1*, Ankara (1969)

---- "Anatolian-Seljuk Architecture", in Akurgal, E. K. *The Art and Architecture of Turkey*, New York, NY (1980), pp.80-110

Lambton, A. K. S. *Continuity and Change in Medieval Persia: Aspects of Administrative, Economic and Social History, 11th-14th Century*, Albany, NY (1988)

Lehmann, F. "Architecture of the Early Sultanate Period and the Nature of the Muslim State in India" in Flood, F. B. (ed.) *Piety and Politics in the Early Indian Mosque*, New Delhi (2008), pp.130-149

Leiser, G. "Saltuḡ Oghulari", in Bosworth, C. E., van Donzel, E., Heinrichs, W. P. and Lecomte, G. (eds.) *The Encyclopedia of Islam, New Edition Vol. VIII*, Leiden (1995) p.1001

Loud, G. A. (tr.) *The Crusade of Frederick Barbarossa; The History of the Expedition of the Emperor Frederick and Related Texts*, Aldershot (2010)

Löytved, J.H. *Konia, Inschriften der Seldschukischen Bauten*, Berlin (1907)

Luther, K. A. *The Political Transformation of the Seljuq Sultanate of Iraq and Western Iran: 1152-1187*, Unpublished Ph.D Thesis, Princeton University, Princeton, NJ (1964)

---- "Rāvandī's report on the administrative changes of Muḡammad Jahān Pahlavān", in Bosworth, C. E. (ed.) *Iran and Islam*, Edinburgh (1971), pp.393-406

---- (tr.) *The History of the Seljuq Turks From the Jāmi' al-Tawārīkh. An Ilkhanid Adaption of the Saljūq-nāma of Ṣahīr al-Dīn Nīshāpūrī*, Richmond (2001)

Magoulias, H. J. (tr.) *O City of Byzantium, Annals of Niketas Choniates*, Detroit, MI (1984)

Majeed, T. *The phenomenon of the Square Kufic script: The cases of Īlkhānid Iṣfahān and Baḥrī Mamlūk Cairo*, unpublished D.Phil. Thesis, The University of Oxford, Oxford (2006)

Makovicky, E. "Ornamental Brickwork: Theoretical and applied symetrolgy and classification of patterns", *Computers and mathematics with applications*, Vol. 17, No. 4-6 (1989), pp.955-999

Mamedov, M. and Muradov, R. *Gurganj: Architectural and Historical Guide*, Padua (2001)

Martin M. E. "The Venetian-Seljuk Treaty of 1220", *The English Historical Review*, Vol. 95, (1980), pp.321-329

Mayer, L. A. *Islamic Architects and their works*, Geneva (1956)

Mecit, S. "Kingship and ideology under the Rum Seljuqs" in Lange, C. and Mecit, S. (eds.) *The Seljuqs; Politics, Society and Culture*, Edinburgh (2011), pp.63-78

---- *The Rum Seljuqs: Evolution of a Dynasty*, London (2014)

Meinecke, M. *Fayencedekorationen seldschukischer Sakralbauten in Kleinasien*, Tübingen (1976)

Melikian Chirvani, A. S. "The westward progress of Khorosanian culture under Seljuks", in Watson, W. (ed.) *The Art of Iran and Anatolia from the 11th to the 13th century AD, Percival David Foundation of Chinese Art Colloquium on Art and Archaeology in Asia 4 (25-28 June 1973)* London (1975), pp.110-125

Mepisashvili, R. and Tsintsadze, V. *The Arts of Ancient Georgia*, London (1979)

Michailidis, M. D. *Landmarks of the Persian Renaissance: Monumental Funerary Architecture in Iran and Central Asia in the Tenth and Eleventh Centuries*, Unpublished Ph.D. thesis, Massachusetts Institute of Technology, Cambridge, MA (2007)

- Michell, G. (ed.) *Architecture of the Islamic World, Its History and Social Meaning*, London (1978)
- Mkrtchyan, S. *Treasures of Artsakh-Karabagh*, Yerevan (2002)
- Nasr, S. H. *Science & Civilization in Islam*, Cambridge (1987)
- Naxçıvan Ensiklopediyası, Vol. 1*, Naxçıvan (2005)
- Naza-Dönmez, E. E. *Wooden Mosques of the Samsun Region, Turkey from the Past to the Present, in light of Surveys carried out in the years 2001-2003* (BAR International Series No. 1820), Oxford (2008)
- Nizami, C. *dövrü memarlıq abideleri*, Baku (1991)
- Norwich, J.J. *A Short History of Byzantium*, London (1998)
- Ölçer, N. "The Anatolian Seljuks", in Roxburgh, D. (ed.) *Turks: A Journey of a Thousand Years 600-1600*, London (2005), pp.104-113
- Öney, G. "Akşehir Ulu Camisi", *Anadolu XI* (1967), pp.171-184
- "Mounted Hunting Scenes in Anatolian Seljuks in comparison with Iranian Seljuks", *Anadolu XI* (1967), pp.139-59
- "Summary of Lion Figures in Anatolian Seljuk Architecture", *Anadolu XIII* (1969), pp.43-67
- Önge, M. "Caravanserais as Symbols of Power in Seljuk Anatolia", in Osmond, J. and Cimdina, A. (eds.) *Power and culture: identity, ideology, representation*, Pisa (2007), pp.49-69
- *Conservation of Cultural Heritage on Alaeddin Hill in Konya from the 19th Century to Present Day*, unpublished PhD thesis, METU, Ankara (2011)
- Önge, Y. "Selçukluda ve Beyliklerde Ahşap Tavanlar", in *Atatürk Konferansları V 1971-1972*, Ankara (1975), pp.179-195
- Önkal, H. *Anadolu Selçuklu Türbeleri*, Ankara (1996)
- Ousterhout, R. G. *Master Builders of Byzantium*, Princeton, NJ (1999)

Özgüç, T. and Akok, M. "Melik Gazi Türbesi ve Kalesi", *Belleten* XVIII (1954), pp.331-336

Pancaroglu, O. "The Itinerant Dragon-Slayer: Forging Paths of Image and Identity in Medieval Anatolia", *Gesta*, Vol. 43, No. 2 (2004), pp.151-164

---- "Formalism and the Academic Foundation of Turkish Art in the Early Twentieth Century", *Muqarnas* XXIV, *History and Ideology: Architectural Heritage in the "Lands of Rum"* (2007), pp.67-78

---- "A fin-de-siècle Reconnaissance of Seljuk Anatolia: Sarre and His *Reise in Kleinasien*", in Çelik, Z. et al (eds), *Scramble for the Past: The Rise of Archaeology in Ottoman Lands*, İstanbul (2011), pp. 399-415

---- "The House of Mengüjek in Divriği: Constructions of Dynastic Identity in the late Twelfth Century", in Peacock, A. C. S. and Yıldız, S. N. *The Seljuks of Anatolia, Court and Society in the Medieval Middle East*, London (2013), pp.25-67

---- "Devotion, Hospitality and Architecture in Medieval Anatolia", *Studia Islamica*, Vol. 108 (2013)a, pp. 48-81

Peacock, A. C. S. "Georgia and the Anatolian Turks in the 12th and 13th centuries", *Anatolian Studies*, Vol. 56 (2006), pp.127-146

---- *Early Seljūq History, A new interpretation*, London (2010)

---- "From the Balkhān-Kūhīyān to the Nāwakīya: Nomadic Politics and the Foundations of Seljūq Rule in Anatolia", in Paul, J. (ed.) *Nomad Aristocrats in a World of Empires*, Wiesbaden (2013) pp.55-80

---- "Court and Nomadic Life in Saljūq Anatolia", in Durand-Guédy, D. *Turco-Mongol Rulers, Cities and City Life*, Leiden and Boston, MA (2013)b, pp.191-222

---- "The Seljuk Sultanate of Rūm and the Turkmen of the Byzantine frontier, 1206–1279", *Al-Masaq: Journal of the Medieval Mediterranean*, 26:3 (2014), pp.267-287

---- “An Interfaith Polemic of Medieval Anatolia: Qādī Burhān al-Dīn al-Anawī on the Armenians and their Heresies”, in Peacock, A. C. S., De Nicola, B. and Yıldız, S. N. (eds.) *Islam and Christianity in Medieval Anatolia*, Farnham (2015), pp.233-261 [in press]

Pickett, D. *Early Persian Tilework: The Medieval Flowering of Kāshī*, London (1997)

Pinder-Wilson, R. “Ghaznavid and Ghūrid Minarets”, *Iran*, Vol. 39 (2001), pp.155-18

Pope, A. U. (ed.), *A Survey of Persian Art from Prehistoric Times to the Present, Vol. III*, Oxford (1938)

---- (ed.), *A Survey of Persian Art from Prehistoric Times to the Present, Vol. IV*, Oxford (1939)

---- (ed.) *A Survey of Persian Art from Prehistoric Times to the Present, Vol. III*, Ashiya (1981)

---- *A Survey of Persian Art from Prehistoric Times to the Present, Vol. VIII*, Ashiya (1981)

Pormann, P. E. and Savage-Smith, E. *Medieval Islamic Medicine*, Edinburgh (2007)

Redford, S. “The Alaeddin Mosque in Konya Reconsidered”, *Artibus Asiae*, Vol. 51 (1991), pp.54-74

---- “The Seljuks of Rum and the Antique”, *Muqarnas* X (1993), pp.148-156

---- “13th century Rum Seljuq Palaces and Palace imagery”, *Pre-Modern Islamic Palaces, Ars Orientalis*, Vol. 23 (1993), pp.219-239

---- *Archaeology of the frontier in the medieval Near East: Excavations at Gritille, Turkey*, Philadelphia, PA (1998)

---- *Landscape and the State in Medieval Anatolia*, Oxford (2000)

---- "Just landscape in medieval Anatolia", *Studies in the History of Gardens & Designed Landscapes: An International Quarterly*, 20:4 (2000)b, pp.313-324

---- "A Grammar of Rûm Seljuk Ornament", *Mesogeios*, 25-26 (2005), pp.283-310

---- "Sinop in the summer of 1215: The beginning of Anatolian Seljuk architecture", *Ancient Civilizations from Scythia to Siberia*, Vol. 16, Nos.1-2 (2010), pp.125-149

Redford, S. and Leiser, G. *Victory Inscribed: The Seljuk Fetihname on the Citadel Walls of Antalya, Turkey / Taşa Yazılan Zafer: Antalya İçkale Surlarındaki Selçuklu Fetihnamesi* (Adalya Supplements No. 7.), İstanbul (2007)

Richards, D. S. (tr.) *The Chronicle of Ibn al-Athîr for the Crusading Period from al-Kāmil fî 'l-ta'rikh. Part 2 The Years 541-589/1146-1193: The Age of Nur al-Din and Saladin*, Aldershot (2007)

---- (tr.) *The Chronicle of Ibn al-Athîr for the Crusading Period from al-Kāmil fî 'l-ta'rikh. Part 3 The Years 589-629/1193-1231: The Ayyubids after Saladin and the Mongol Menace*, Aldershot (2008)

Rogers, J. M. *Patronage in Seljuk Architecture*, unpublished D. Phil. Thesis, The University of Oxford, Oxford (1972)

---- "Seljuk Architectural Decoration at Sivas", in Watson, W. (ed.) *The Art of Iran and Anatolia from the 11th to the 13th century AD*, Percival David Foundation of Chinese Art Colloquium on Art and Archaeology in Asia 4 (25-28 June 1973) London (1975), pp.13-27

---- "Waqf and Patronage in Seljuk Anatolia and the Epigraphic Evidence", *Anatolian Studies*, Vol. XXVI (1976), pp.69-103

---- "Calligraphy and Common Script: Epitaphs from Aswan and Akhlat" in Soucek, P. P. (ed.) *Content and Context of Visual Arts in the Islamic World*, London (1988), pp.105-137

---- "Art and architecture in Anatolia", in Bosworth, L. E., Van Donzel, E., Heinrichs, W. B. and Lecomtre, G. (eds.) *Encyclopedia of Islam, New Edition Vol. VIII*, Leiden (1995), pp.964-970

Rosenthal, F. (tr.) *Ibn Khaldun, The Muqaddimah, An introduction to History, Vol. 2*, New York, NY (1958)

Salamzade, E. and Memmedzade, K. *Azerbaycan memarlığının Naxçıvan mektebi abideleri*, Baku (1985)

Salzman, L. F. *Building in England Down to 1540 A Documentary History*, Oxford (1952)

Saritoprak, Z. "Allah", in Leaman, O. (ed.) *The Qur'an: an Encyclopedia*, Abingdon (2006), pp.33-41

Sarre, F. *Der Kiosk von Konia*, Berlin (1936)

Sauvaget, J. and Wiet, G. (eds.) *Répertoire Chronologique d'Épigraphie Arabe Vol. 9*, Cairo (1937)

---- (eds.) *Répertoire Chronologique d'Épigraphie Arabe Vol. 10*, Cairo (1939)

---- (eds.) *Répertoire Chronologique d'Épigraphie Arabe Vol. 11*, Cairo (1941-2)

Savvides, A. G. C. *Byzantium in the Near East: Its relations with the Seljuk Sultanate of Rum in Asia Minor the Armenians of Cilicia and the Mongols A.D. c.1192-1237*, Thessaloniki (1981)

Schacht, J. "Ein archaischer Minaret-Typ in Ägypten und Anatolien", *Ars Islamica*, Vol. 5, No. 1 (1938), pp.46-54

Schilbach, E. *Byzantinische Metrologie*, München (1970)

Schroeder, E. "Islamic Architecture, F. The Seljūq Period", in Pope, A. U. (ed.) *A Survey of Persian Art from Prehistoric Times to the Present, Vol. III*, Ashiya (1981), pp.981-1045

- Shukurov, R. "Harem Christianity: The Byzantine Identity of Seljuk Princes", in Peacock, A. C. S. and Yıldız, S. N. (eds.) *The Seljuks of Anatolia, Court and Society in the Medieval Middle East*, London (2013), pp.115-150
- Siméon, P. "Hulbuk: Architecture and material Culture of the Capital of the Banijurids in Central Asia (ninth-eleventh centuries)", *Muqarnas* XXIX (2012), pp.385-421
- Sinclair, T. *Eastern Turkey: An Architectural and Archaeological Survey Vol. 1*, London (1987)
- *Eastern Turkey: An Architectural and Archaeological Survey Vol. 2*, London (1989)
- *Eastern Turkey: An Architectural and Archaeological Survey Vol. 3*, London (1989)
- *Eastern Turkey: An Architectural and Archaeological Survey Vol. 4*, London (1990)
- Snelders, B. *Identity and Christian-Muslim Interaction; Medieval Art of the Syrian Orthodox from the Mosul Area*, Leuven / Paris / Walpole, MA (2010)
- Sourdel, D. and Sourdel-Thomine, J. *A Glossary of Islam*, Edinburgh (2007)
- Sourdel-Thomine, J. "Deux minarets d'époque seljoukide en Afghanistan", in *Syria*, Vol. XXX (1953), pp.108-136
- Sönmez, Z. *Anadolu Turk-Islam mimarisinde sanatçılar*, Ankara (1995)
- Stronach, D. and Cuyler Young T. "Three Octagonal Seljuk tomb towers from Iran," *Iran*, Vol. IV (1966), pp.1-20
- Strzygowski, J. *Altai-Iran und Völkerwanderung*, Leipzig (1917)
- Tabbaa, Y. *Constructions of power and piety in medieval Aleppo*, University Park, PA (1997)
- *The transformation of Islamic Art during the Sunni Revival*, London (2001)
- Texier, C. *Description de l'Asie Mineure, Vol. 2*, Paris (1849)

Tonghini, C. *Qal'at Ja'bar pottery: a study of a Syrian fortified site of the late 11th-14th centuries*, Oxford (1998)

Treadgold, W. *The Middle Byzantine Historians*, Basingstoke (2013)

Tuğrul, B. "Radiographic Study of the Door of the Great Mosque (Ulucami) at Cizre", *Journal of Near Eastern Studies*, Vol. 55, No. 3 (1996), pp.187-194

Tuncoku, S., Caner-Saltik, E. N. and Boke, H. "Definition of the materials and related problems of a XIIIth century Anatolian Seljuk 'mescid'", in Thiel, M. (ed.) *Conservation of Stone and other materials, Proceedings of the international RILEM/UNESCO Congress*, London (1993), pp.368-375

Tuncoku, S. and Caner-Saltik, E. N. "Opal A rich additives used in ancient lime mortars", *Cement and Concrete Research*, Vol. 36 (2006), pp.1886-1893

Ünal, R. H. *Les monuments Islamiques anciens de la ville d'Erzurum et de sa région*, Paris (1968)

---- *Monuments Salğūgides de Kemah (Anatolie Orientale)*, *Revue des Études Islamiques*, Vol. 35 (1967), pp.149-172

Vryonis S. *The decline of medieval Hellenism in Asia Minor and the process of Islamization from the 11th through the 15th century*, Berkley, CA (1971)

---- "Nomadization and Islamization in Asia Minor", *Dumbarton Oaks Papers*, Vol. XXIX (1975), pp.42-71

Walker, A. "Middle Byzantine aesthetics of power and the incomparability of Islamic Art: The architectural ekphraseis of Nikolaos Mesarites", *Muqarnas* XXVII (2011), pp.79 – 101

---- *The Emperor and the Word: Exotic Elements and the Imagining of Middle Byzantine Power, Ninth to Thirteenth Century CE*, Cambridge (2012)

Watson, O. *Persian Lustre Ware*, London (1985)

---- *Ceramics from Islamic Lands*, London (2004)

- Wehr, H. *A Dictionary of Modern Written Arabic*, Wiesbaden (1966)
- Wilber, D. N. "The Development of Mosaic Faience in Islamic Architecture in Iran", *Ars Islamica*, Vol. 6, No. 1 (1939), pp.16-47.
- *The Architecture of Islamic Iran; The Ilkhānid Period*, New York, NY (1969)
- "Builders and Craftsmen in Islamic Iran; The Earlier Periods", *AARP, Art and Archaeology Research Papers*, Vol. 10, (1976), pp.31-39
- Wilkinson, C. K. *Nishapur: Some Early Islamic Buildings and Their Decoration*, New York, NY (1986)
- Winfield, D. "Some Early Medieval Figure Sculptures from North-East Turkey", *Journal of the Warburg and Courtauld Institutes*, Vol. 31 (1968), pp.33-72
- Wolper, E. S. "The politics of patronage: political change and the construction of Devish lodges in Sivas", *Muqarnas* XII (1995), pp.39-47
- Wright, J. A. *Brick Building in England from the Middle Ages to 1550*, London (1972)
- Wulff, H. E. *The traditional crafts of Persia*, Cambridge, MA (1966)
- Yalman, S. *Building the Sultanate of Rum: Memory, Urbanism and Mysticism in the Architectural Patronage of Sultan 'Ala al-Din Kayqubad (r. 1220-1237)*, unpublished Ph.D. Thesis, Harvard University, Cambridge, MA (2011)
- "'Ala al-Din Kayqubad Illuminated: A Rum Seljuq Sultan as Cosmic Ruler", *Muqarnas* XXIX (2012), pp.151-186
- Yaltırık, F. *Dendroloji-1, Orman ve Parklarımızdaki bazı Yapraklı Ağaç ve Çalıların Kışın Tanınması*, İstanbul (1981)
- Yardımcı, İ. "The Glazed Tile Techniques of the Seljuk and Beylik Periods", *Journal of literature and Art Studies*, Vol. 3, No.1 (2013), pp.42-51

Yavuz, A. T. "The characteristics of star vaults in Seljuk Anatolia", in Brebbia, C. A and Frewer, R. J. B. *Structural repair and maintenance of historical buildings III*, Southampton (1993), pp.165-192

---- "The concepts that shape Anatolian Caravanserais", *Muqarnas*, Vol. XIV (1997), pp.80-95

Yazar, T. *Nahcivan'da Türk Mimarisi (Başlangıcından 19. Yüzyılın Sonuna Kadar)*, Ankara (2007)

Yetkin, S. K. *L'Architecture Turque en Turquie*, Paris (1962)

Yıldız, S. N. "A nadīm for the Sultan: Rāwandī and the Anatolian Saljūqs", in Peacock, A. C. S. and Yıldız, S. N (eds.) *The Seljuks of Anatolia, Court and Society in the Medieval Middle East*, London (2013), pp.91-111

Yıldız, S. N. and Şahin, H. "In the Proximity of Sultans: Majd al-Dīn Ishāq, Ibn 'Arabī and the Seljuk Court", in Peacock, A. C. S. and Yıldız, S. N (eds.) *The Seljuks of Anatolia, Court and Society in the Medieval Middle East*, London (2013), pp.173-205

Yoltar-Yıldırım, A. "Seljuk Carpets and Julius Harry Löytved-Hardegg: A German Consul in Konya in the Early 20th Century", in Dávid, G. and Gerelyes, I. (eds.), *Thirteenth International Congress of Turkish Art: Proceedings*, Budapest, (2009), pp. 747–57

Yurdakul, E. *Kayseri – Külük Camii ve Medresesi*, Ankara (1996)

INDEX

This index gives page references for words used in footnotes and the main body of the text. Contents of the appendices, figure captions, tables and bibliography are not included. With the exception of early travellers and pioneers in the field, the names of cited scholars are also omitted.

A

- ‘Abbās, Safavid Shāh; 99
 al-‘Abbās al-Majūsī; 334
 ‘Abbāsīd; 24, 28
ablaq; 77, 118
 Abū ‘Alī al-Ḥalabī ibn al-Kattānī; 79, 259
 Abū ‘Alī al-Ḥasan ibn Ibrāhīm al-Sulṭānī; 51
 Abū Bakr; 61
 Abū Huraya; 79
 Abū’l-Mu‘amran mosque minaret, Ani; 126
 Abū’l-Makārim ibn Barakāt; 15
 Abū’l-Qāsim; 196
 Abū Sa‘id al-Ḥayrāt; 128
 Abū Zayd; 199, 200
 Acre; 90
adhān; 125, 134, 147
 al-‘Ādil (see al-Malik al-‘Ādil)
 Afḍal, Ayyūbid vassal; 26, 90
 Afghanistan; 7, 61, 138, 139, 140, 357, 396
 Afyon; 75, 76, 114, 119, 120, 261
 Afşin; 64, 84, 258, 388
 Eshab-i Kehf *ribāt*; 60, 62, 68, 71, 73
 aggregates; 209-211, 213
 Ahlat; 10, 42, 57, 58, 104, 166, 263
 Aḥmad ibn Abī Bakr al-Marandī; 130, 143, 269, 270, 279, 351, 370
 Aḥmad ibn Mas‘ūd; 130
 ‘Ajāmī ibn Abī Bakr al-Nakhshiwānī; 97, 143, 229
ajouré; 61, 63, 82, 253
Akhbār al-dawla al-saljūqiyya; 16, 20
 Aksaray; 16-19, 58, 113, 166, 169, 183, 184, 211, 237, 394
 Alay han; 35, 38, 40, 55, 58, 68, 75, 93, 166, 383, 388
 Eğri minaret; 142, 144, 146, 151, 170, 172, 178, 184, 211, 213, 238, 312,
 Great Mosque; 245
 Great Mosque minaret; 148
 Kesik Minare mosque minaret; 133, 151, 172, 186, 237, 368
 Kılıç Arslān II hamam; 216
 Aksarayī; 11
 Akşehir; 3, 90, 139, 157, 169, 239, 271, 393, 394
 Ferruh Shah mosque; 90, 157
 Great Mosque; 128, 168, 170, 177, 187, 189, 239, 240
 Great Mosque minaret; 128, 148, 197
 Güçük Minare mosque minaret; 128, 130
 Sayyid Mahmud Hayrani tomb; 238
 ‘Alā’ al-Dīn Kay Qubādh I; 2, 20, 22-24, 27, 136, 146, 147, 184, 189, 198, 199, 278, 279, 347, 351, 375, 376, 388, 392
 ‘Alā’ al-Dīn mosque, Ankara; 245, 252
 Alaşehir, Battle of; 21, 23
 Alay han, Aksaray; 35, 38, 40, 55, 58, 68, 75, 93, 166, 383, 388
 Alborz Mountains; 105
 Aldobrandini; 21
 Aleppo; 6, 25, 26, 33, 57, 82, 83, 85, 89, 90, 154, 387, 393
 Citadel portal; 388
 Citadel palace portal; 57, 58
 al-Firdaws madrasa; 387
 Great Mosque minaret; 57, 149
 Mashhad al-Dikka; 55
 mashhad al-Ḥusayn; 83
 al-Sulṭāniyya madrasa; 82, 83
 al-‘Ādil Abū Bakr, sultan; 387
 Zāhir Ghāzī; 387
 al-Zāhiriyya madrasa; 85
 Alexius III Angelos, Byzantine emperor; 19
 ‘Alī; 61
 Allāh; 24, 62, 78, 135, 139, 140, 197, 205, 225, 302, 319, 325, 338, 339, 358, 360, 363, 366, 382
 Alp Arslān, Great Saljūq sultan; 9, 10, 11, 148
 aluminium silicate; 168
 al-‘Amadiyya; 83, 85
 Bāb al-Mawşil; 64, 83, 84, 85, 388
 ‘amal; 105, 109, 130, 245, 356
 Amasya; 13, 15, 17, 20, 55, 56, 72, 74, 248
 Gök madrasa; 369
 Halifet Gazi tomb; 50, 63, 67, 96, 107
 American Numismatic Society; 204, 258
 Āmid (Diyarbakır); 19, 125, 252, 257, 258, 260
amir; 12, 18, 20, 22, 23, 28, 36, 90, 156, 260, 272, 276, 376, 380, 384-386, 391
 Andalusians, mosque of, Fez; 245
 andesite; 209
 angelology; 123
 Ani; 36, 68, 261
 Abū l-Mu‘amran mosque minaret; 126
 Church of the Holy Apostles; 261
 Manūchihr mosque minaret; 126
 Ankara; 11, 13, 17, 20, 23, 242, 384
 ‘Alā’ al-Dīn mosque; 245, 252
 Etnografya Müzesi; 166, 167, 243, 244, 357
 Kuyulu Paşa mosque; 166
 Middle East Technical University; 32

Antalya; 21, 24, 53, 68, 152, 153, 249, 275, 278, 288, 335, 350, 376, 392
City walls; 15, 25, 89, 148, 382
Museum; 63, 136, 200, 254
re-conquest of; 275
Yivli minaret; 147
anthropomorphic; 379
Antioch; 26, 148
Syrian Orthodox Patriarch of; 15
apotropaic; 64, 85, 100, 160
al-Aqṣā mosque, Jerusalem; 88
Arabia; 58, 125
Araxes River; 36
Armenian; 4, 10, 12, 15, 16, 21, 23, 26, 30, 42, 61-63, 68, 91, 99, 152, 154, 158, 176, 240, 249, 259, 260, 261, 270, 271, 276, 277, 296, 299, 386, 389, 390, 392, 395
Church architecture; 42, 61, 63, 64, 118, 260, 261, 294, 369, 393
Arrān; 16
Arslān Kutalmış tomb, Niksar; 117
Arslān Shāh, Great Saljūq sultan; 16
Artuqids; 19, 125, 160, 258, 388
işba' maftūh; 172
Aṣḥāb al-Kahf, 51
ashlar; 53, 63, 78, 152, 157-159, 235, 254, 268, 277, 288, 296, 301, 305, 341, 346
al-Ashraf, Ayyūbid of Mesopotamia; 26, 27, 90
al-asmā' al-ḥusnā; 79
Aspendos palace; 136, 198, 200
Assur palace; 284
atābeg; 15, 16, 350, 376
atābeg lidegiz; 15, 16
Atabey; 90
Atabey Ertokuş Madrasa, Atabey; 335, 376
ʿAṭṭār; 389
āya; 134
Ayaz; 385
Ayyūb; 18
Ayyūbids; 6, 18, 19, 21, 23-27, 39, 42, 57, 67, 82, 85, 88, 89, 90, 92, 125, 148, 149, 154, 249, 385, 386, 393, 395
Azerbaijan (Ādharbaījān); 15, 16, 29, 32, 97, 99, 316, 325

B

Bāb al-Futūḥ, Cairo; 56, 57
Bāb al-Tilism, Baghdad; 64, 84, 258, 388
Badakhshān; 7
Badr al-Dīn Lu'lu', ruler of al-Mawṣil (Mosul); 25, 26, 83
Badr al-Jamālī; 4
Baghdad; 15, 84, 85, 176, 249
Bāb al-Tilism; 64, 84, 258, 388
Qumriyya mosque; 142
Qumriyya mosque minaret; 239
Bagrat cathedral, Kutaisi; 294
Bagratid; 154, 294
Bahrāmshāh ibn Dāwūd, Mengüjekid ruler; 12, 25, 100
Bakr Muḥammad al-banna' ibn Muhsin al-mi'mar; 97
Balkh; 7, 357

Balkhān-Kūhīyān; 11
Balwaši-Lipariteans; 12
Bānījūrīds; 138
Bar Hebraeus; 14
Barbarossa (see Frederick I)
barrel vault; 248, 277
Basiani, Battle of; 20
Basil II, Byzantine emperor; 276
Bekar Sultan tomb, Gülağaç; 97, 113, 119, 133, 138, 170, 178, 180, 182, 183, 196, 213
Bell, Gertrude; 46, 129, 160, 179, 242
Berlin; 200, 202, 203, 218, 255
Beylik; 31, 125, 396
Beyşehir; 197-200, 206, 218, 254
Biṣṭām minaret, Iran; 176
Black Sea; 24, 25, 232, 241, 278
blacksmith; 207, 254, 262, 269
Bobrinsky Bucket; 138
Bodleian Library, Oxford; 257
Bohemond IV, ruler of Antioch; 26, 148
borax; 196
de Laborde; 301
Boyali; 75
brass; 160, 255, 257, 388
brick-built; 42, 85, 96, 99, 114, 188, 239, 249, 293, 308, 331
brick muqarnas; 57, 58, 114, 141, 142, 175-180, 186-188, 192, 193, 234, 314, 315, 331
bridges; 5, 8, 153, 316, 377, 382
British Museum, London; 199
bronze; 204, 255, 256, 258, 304
Buddhist; 123, 284
Bukhārā; 126, 242
Kalyan minaret; 126
Oburdan mosque; 242
Buruciye madrasa, Sivas; 73, 279
Büyük Karatay madrasa, Konya; 61, 63, 78, 79, 82, 83, 85, 86, 89, 95, 152, 197, 199, 203, 235, 250
Byron, Robert; 134, 357
Byzantine; 9-11, 13-17, 21, 22, 27-30, 46, 63, 90, 157, 163, 168-172, 236, 239, 240, 248, 249, 268, 271, 277, 278, 366, 376, 387-389, 394, 395, 397
architecture; 3, 83, 119, 176, 235, 239, 248, 251, 392
emperors; 10, 13-15, 17, 19, 23, 276, 386, 399

C

Cairo; 6, 10, 90, 92, 166
Bāb al-Futūḥ; 56
Al-Shāf'ī tomb; 346
calcite; 208, 211
Caliph al-Nāṣir li-Dīn Allāh; 24, 382
calligrapher; 87, 269
cantilever; 180, 305
Capella Palatina, Palermo; 180
caravanserai; 8, 25, 28, 31, 36, 37, 39, 53, 55, 85, 153, 176, 249, 284, 382, 392
Çarşamba; 241, 242
Caspian Sea; 105, 171
cast; 256
cavetto; 40, 46, 71, 75, 91, 92, 101, 230, 244, 343, 354, 365

Çelebi, Evliya; 198
Central Asia; 2, 6, 9, 16, 30, 33, 149, 242, 278, 284, 295, 302, 304, 316, 331, 352, 379, 392, 395
Chagri; 9
chenopodiacea salsola soda; 196
Chisht; 284, 339
Çifte madrasa, Kayseri; 41, 62, 68, 69, 71-73, 75, 282, 288, 299, 369, 388, 391
Çifte Minareli madrasa, Erzurum; 177, 186, 192, 292
Çifte Minareli madrasa, Sivas; 279, 288, 364
Chilandar monastery; 239
Chinese; 128
Choniatēs, Niketas; 9, 13, 14, 17-19, 21, 22, 29, 276, 277, 386
Christ; 258
Christian; 10, 11, 14, 15, 19, 22, 23, 26, 28, 42, 88, 99, 123, 148, 149, 152, 158, 167, 183, 260, 270, 278, 287, 294-296, 386, 390
chromite; 196
Cilicia, Armenian Kingdom of; 16, 19, 21, 23, 26, 148, 299, 376
Citadel mosque, Divriği; 6, 39, 40, 43, 56, 72, 117, 122, 162, 163, 289, 391
Citadel mosque, Erzurum; 126
Cizre; 255, 257
Great Mosque; 232, 255, 388
clay; 158, 168, 169, 197, 209, 210, 217, 257, 262, 265, 267
cobalt; 186, 196, 197, 199
coinage; 204, 258, 388
Coloneia; 16
Comnenids; 24, 278
conifer; 232
Constantinople; 14, 19, 21, 22, 27, 147, 169, 180, 277, 278
copper; 199, 256
alloy; 255
oxide; 196, 197
corbel; 71, 176, 184
craftsmen; 3, 4, 16, 28, 31, 35, 36, 39, 40, 42, 51, 58, 61, 64, 75, 90-92, 119, 122, 130, 138, 143, 148, 152, 153, 156, 158, 163, 177, 180, 183, 192, 193, 200, 206, 214, 216, 217, 230, 232, 239, 254, 259, 262-264, 267, 269-272, 275, 294, 310, 315, 316, 319, 331, 336, 339, 343, 357, 362, 376, 379, 380, 385, 389, 390, 392, 394, 397
Crusaders; 11, 17-19, 88, 90, 393
crypt; 99, 101, 106, 107, 114, 119, 227, 324, 325, 372, 379
crystobalite; 169
Cyprus; 21, 24, 27, 36, 376, 382

D

Damascus; 6, 15, 55, 57, 154, 283, 284, 386, 387
Dānīshmēdids; 12, 14, 15, 22, 30, 35, 46, 123, 140, 193, 276, 277, 279, 387
Dağūq minaret; 128, 129
dār al-Islām; 140, 156, 387
Dāwūd I ibn Ishāq, Mengüjekid ruler; 12
Dayfa Khātūn, founder of al-Firdaws madrasa; 387
David Collection, Copenhagen; 256, 301
Delhi; 6, 140, 141

Quṭb Minār; 139, 140, 144, 184
Quwwat al-Islām mosque; 141
dendrochronology; 110, 179, 232, 234, 242, 346, 396
Denizli (Laodikea); 28
Damāvand, Iran; 176
derbent; 36
dervish; 279
dhimmī; 23, 260, 390
dhirā' (cubit); 171
Dhū'l-Qarnayn; 256
Dhū'l-Nūn, Dānīshmēdid ruler; 13, 276, 277
diarchy; 16
Diez; 31
dirham; 9, 199, 301
dīnār; 9
Divriği; 13, 43, 106, 163, 166, 272, 294, 390
Citadel mosque; 6, 39, 40, 43, 56, 72, 117, 122, 162, 163, 289, 391
Kamereddin tomb; 40, 117, 133
Mosque and hospital complex; 55, 294
Sitte Melik tomb; 6, 35, 38, 42, 43, 50, 55, 56, 63, 72, 94, 163, 391
dīwān al-inshā' (Chancery); 382
Ḍiyā' al-Dīn Ghāzī, Saltuqid sultan; 126
Diyarbakır (Amīd); 19, 125, 252, 257, 258, 260
Döner Kümbet, Kayseri; 122
Dorylaion (Eskişehir); 28
double-shell dome; 108
dragon; 64, 83, 84, 218, 255-258, 388
du'ā'; 104
Ducas; 10
Dvin; 18

E

eagle; 106, 226, 388
Ebul Kasım tomb, Tokat; 130
Edjmiatzin cathedral, Armenia; 296
eflourcence; 111
Eğirdir Lake; 14
Eğri minaret, Aksaray; 142, 144, 146, 147, 170, 178, 184, 185, 210, 211, 238, 239, 312
Egypt; 4, 15, 18, 25, 30, 56, 58, 73, 152, 172, 249, 278
Elbistan; 17, 26, 68, 90
elbow bracket; 88, 393
Elti Ma'mūn bint Maḥmūd ibn Yağıbasan; 46, 387
Emir han tomb, Kayseri; 118
Erbil Great Mosque minaret; 129
Ertokuş tomb, Isparta; 90, 119, 376
Erzurum; 20, 26, 31, 42, 154, 186, 211
Çifte Minareli madrasa; 177, 186, 192, 292
Citadel mosque; 126
Tepsi minaret; 126, 169, 170, 174, 175, 210, 211
Erzincan; 12, 25, 42, 100, 152, 154, 193
Eshab-i Kehf ribāṭ, Afşin; 62, 78, 71
Etnografya Müzesi, Ankara; 166, 167, 243, 244, 357
Euchaita, bishop of; 153
Euphrates; 250

Evdir han; 8, 46, 53, 56, 68, 69, 71, 72, 74, 288, 293, 392

F

Fakhr al-Dīn Rāzī tomb, Gurganj; 350

*fi*s; 9, 204

Farghāna; 113, 384

fan vault; 107, 177, 314

fath-nāma; 15, 25, 382, 383

Fatih mosque, Enez; 251

Fāṭimids; 4, 6, 10, 18, 56, 166, 384

feldspar; 169, 209

ferric oxide; 158

Ferruh Shah mosque, Akşehir; 90, 157

Fez, Morocco; 245

al-Firdaws madrasa, Aleppo; 387

First Crusade; 11

flint; 196, 209

formalist; 5, 31, 32, 35, 3925, 396

forged; 254

Fourth Crusade; 21

Franks; 16, 18, 215

Frederick I Barbarossa; 17, 18

fresco; 179, 214, 215

futuwwa; 24, 382

G

Gaban fortress; 26

gach; 327

gadrooned; 147, 186

gamma radiation; 256

Genoa; 350

Gandzasar

St. Hovhannes church; 260

Georgian; 12, 20, 27, 99, 123, 154, 158, 252, 261, 276, 277, 294, 386, 395

Church architecture; 42, 63, 294, 296, 380, 392, 393

Gerata; 350

Gevher Nesībe; 46, 117, 386

ghālibī; 385

ghāzī; 12, 22, 106, 126, 387

Ghazni; 139, 144

Bahrāmshāh, minaret of; 139

Mas'ūd III, minaret of; 144, 184

Ghaznavid; 113, 144, 184, 358

Ghiyāth al-Dīn Kay Khusraw I; 17-22, 28, 36, 46, 192, 275, 383, 386, 391

Ghiyāth al-Dīn Muḥammad ibn Sām tomb, Herāt; 357, 363

Ghūrids; 6, 29, 35, 61, 130, 133, 138, 141, 144, 146, 167, 184, 185, 284, 339, 348, 350, 352, 356-359, 363, 379, 387, 392

Gīlān tomb, Nakhchivān; 99, 107, 114

glazed brick; 197, 214, 353

glazed tile; 2, 3, 31, 33, 35, 111, 117, 134, 143, 152, 156, 157, 170, 177, 188, 189, 192, 193, 196, 197, 198, 204, 208, 245, 263, 268, 270, 272, 277, 301, 314, 328, 331, 347, 354, 356, 363, 384, 389, 391, 394

Gök madrasa, Amasya; 369

Gök madrasa, Sivas; 73, 193, 251, 285

Gök madrasa, Tokat; 73

Gökceli mosque, Çarşamba; 241

Gothic; 90

gold; 198, 199, 220

Greeks; 14, 15, 19, 22, 23, 25, 29, 152, 158, 167, 169, 270, 278, 386, 390

Great Saljūq; 9, 10, 11, 16, 20, 24, 28, 29, 35, 90, 105, 139, 146, 148-150, 171, 192, 193, 317, 329, 350, 352, 385, 387, 393

Gritille; 194, 250

Güdük Minare mosque minaret, Akşehir; 128, 130

Gülağaç; 97, 170, 196, 213

Gulestān tomb, Julfa; 99

Gulpāyagān minaret, Iran; 128, 237

Gunbad-i Kabūd, Marāgha; 7, 97, 130, 141, 325, 326, 352, 353

Gunbad-i Qābūs, Iran; 144, 171, 185

Gunbad-i Surkh, Marāgha; 7, 97, 101, 314

Gurganj (Kunya Urgench); 29, 315, 316, 329, 350, 351, 379, 399

gypsum; 179, 210, 212, 213, 327

mortar; 197, 210, 211

plaster (gach); 327

H

Hadhbānī, Kurdish tribe; 18

ḥadīd (iron); 256

ḥadīth; 88, 79

haematite; 215

Hagia Irene, İstanbul; 235

ḥājj; 263

al-ḥajjār (stonemason); 263

Ḥājī Ferruh, vizir; 51

Halifet Gazi tomb, Amasya; 50, 56, 63, 64, 67, 72, 96, 107

Ḥānī; 256, 258

Harput Great Mosque minaret; 126, 211, 237

Harran; 125

Harūn al-Rashīd; 386

Ḥasan ibn Pīrūz al-Marāghī; 39

Ḥasan Jalāl Dawla, Armenian king of Khachen; 260

hastae; 134, 135, 138, 189, 339, 357-359, 362, 363

Ḥaṭṭīn, Battle of; 18

Haydariyya mosque, Qazvīn; 327

Hekim han, Malatya; 36, 39, 67

helix staircase; 132

Herāt; 8, 138, 339, 352, 357, 363, 396

Friday mosque; 7, 133, 284, 357, 363

Ghiyāth al-Dīn Muḥammad ibn Sām tomb; 357, 363

Hermitage Museum, St. Petersburg; 138, 160

hijra; 2

Hindu architecture; 89

Hoca Hasan mescid, Konya; 208, 211

Holy Rider; 218

Holy Sepulchre church, Jerusalem; 88

Hospitallers; 21, 379

Hötüm Dede minaret, Malatya; 211

Hugh I, Lusignan King of Cyprus; 24, 382

Hulbuk, Tajikistan; 138

hydrous silica; 209

I

Ibn al-ʿArabī; 23
Ibn al-Athīr; 9, 10, 13, 14, 17-19, 21, 27, 29, 249
Ibn Baṭṭūṭa; 278
Ibn Bībī; 15, 19, 24, 25, 77, 304, 347, 376, 384
Ibn Saʿīd; 248
Ibn al-Shīnah; 85
Ibrāhīm ibn Hasan mausoleum, Afrāsiyāb; 62
Iconium (see Konya)
Īl-Arslān, Khwārazm Shāh; 15
Tomb of; 350
Ildegiz, Shams al-Dīn; 15, 16
Ildegüzids; 6, 16, 29, 32, 33, 96, 99, 103, 107, 112, 146, 214, 222, 315, 316, 325, 328, 331, 336, 350, 357, 360, 379, 391, 394
Ilek/llig Khān (see Qarakhānid)
Ilkhānid; 154, 210, 217, 235, 396
Imam-i Khurd tomb, Sar-i Pul; 356
intrados; 310, 311, 316, 320, 323, 324, 328
India; 6, 91, 89, 128, 140, 141, 167, 348
intaglio; 40, 63, 75, 91, 260, 272, 288, 294, 297, 391
Iplikci mosque, Konya; 168
iqṭāʾ; 387
Iraj Türkmen; 17
Iran; 3, 7, 11, 30, 57, 61, 62, 72, 85, 90, 91, 97, 99, 105, 119, 122, 123, 126, 128, 130, 139, 141, 149, 168, 169, 171, 172, 176, 180, 193, 196, 197, 222, 225, 231, 235, 259, 270, 275, 284, 314, 316, 324, 336, 350, 357, 364, 370, 380, 385, 393-396
Architecture; 33, 40, 42, 57, 58, 69, 119, 122, 128, 129, 149, 171
Funerary architecture; 96, 113, 122, 144, 214, 393
Iraq; 15, 20, 26, 30, 32, 84, 248
ʿIrāq-i ʿAjam; 29
ʿIrāqīya; 10, 11
iron; 159, 250-252, 254, 256-258, 262-264, 267
iron cramp; 251, 255
iron oxide; 168, 169, 209
Isauria; 26
Işfahān; 99
Friday mosque; 192, 222, 284, 314, 317, 335
Gar, minaret of; 363
Sārābān minaret; 144, 176
Ishāq ibn Mengücek; 12
Islamic cosmology; 123
Islamisation; 3, 150, 390, 394
Islamische Abteilung, Berlin; 200
Isparta; 14, 119, 325, 376
İstanbul; 160, 161, 203, 218, 235, 255, 256
Ismāʿīl, nephew of Dhūʿl-Nūn; 277
Italy; 263
iwan; 53, 83, 143, 178, 185, 187, 192, 250, 268, 280, 283-287, 293, 301, 304, 308-311, 314, 316, 317, 319, 320, 324, 328, 331, 332, 338, 340, 341, 343, 344, 347, 350, 363, 371, 375
ʿIzz al-Dīn Kay Kāwūs I; 2, 4, 5, 7, 19, 21-29, 32, 38, 39, 41, 51, 53, 78, 89, 90, 92, 125, 128, 135, 136, 138, 143, 146, 147, 149, 159, 162, 168, 192, 275-278, 287-289, 291, 304, 347, 350-353, 370, 376, 379, 380, 382-385, 393, 394

ʿIzz al-Dīn Kay Kāwūs I hospital; 2, 4, 5, 7, 25, 32, 53, 62, 68, 73, 107, 159, 168, 170, 178, 185, 187, 189, 213, 227, 240, 245, 248, 260, 267, 275-380, 382, 384, 386, 392, 394
ʿIzz al-Dīn Kay Kāwūs I tomb; 5, 25, 110, 114, 119, 189, 197, 267, 276, 328, 347-378

J

Jalāl al-Dīn, Khwārazm Shāh; 99, 316
Jam minaret, Afghanistan; 61, 140
jassas (plaster worker); 217
al-Jazarī, Ibn al-Razzāz; 159, 171, 172, 257, 258
Jean de Joinville; 28
Jedburgh Abbey; 296
Jerusalem; 18, 88
al-Aqṣā mosque; 88
Church of the Holy Sepulchre; 88
al-Jibāl; 29
jihād; 19, 23, 147, 148
jizya; 390
joggled voussoirs; 72, 73, 84, 91
Julfa; 99, 146
juniper; 232
Jurjān (Gurgān), Iran; 171

K

Kalyan minaret, Bukhārā; 126
Kamereddin tomb, Divriği; 40, 117, 133
al-Kāmil fi l-taʿrīkh; 9, 15, 27
karaboğaz; 242
Karaman (Larende); 21, 26, 379
Karatay madrasa, Konya; 61, 63, 78, 79, 82, 83, 85, 86, 89, 95, 152, 197, 199, 203, 235, 250
Kāshān; 196, 199, 200, 207
al-Kāshīʿ; 176, 263
kāshī-garī (tile making); 196
Kayseri; 12, 17-19, 22, 23, 25, 26, 62-64, 91, 96, 123, 125, 159, 178, 244, 277, 379, 383, 387, 393, 394
Çifte madrasa; 41, 46, 62, 68, 69, 72, 75, 282, 283, 288, 299, 369, 391
Döner kümbet; 122
Great Mosque; 125, 127, 242, 393
Great Mosque minaret; 127, 139, 147, 148
Huand Khātūn complex; 386
Külük mosque; 32, 46, 55, 61, 68, 71, 73, 75, 387
Külük hamam; 193
Lala mosque; 117, 118
Kemah; 12, 97, 101, 113, 122, 207, 208, 272, 317, 390
Mengücek Gazi tomb; 4, 12, 33, 96-109, 112, 133, 196, 213, 221-231, 315, 317, 353, 354, 391
Kesik Minare mosque minaret, Aksaray; 133, 151, 172, 186, 237, 368
keystone; 72, 73, 288
Kharraqān tomb tower, Iran; 85, 215, 225
Khiva Great Mosque; 241
Khurāsān; 7, 29, 32, 43, 62, 126, 130, 138, 339, 350, 357, 379, 380, 392, 397

khuṭba; 147
Khwārazmian; 35, 99, 316, 350
Khwārazm Shāh; 13, 20, 96, 315, 329, 350, 351, 379
Īl-Arslān; 15, 350
Jalāl al-Dīn; 99, 316
Muḥammad; 29, 154
Tekesh; 20, 315, 316
Kılıç Arslān I; 11
Kılıç Arslān II; 2, 12-19, 21, 22, 37, 40, 46, 179, 181, 204, 216, 258, 275, 277, 299, 383, 386
kiosk (see Konya)
tomb (see Konya)
Kılıç Arslān III; 21
kiln; 167, 168, 207, 208, 210, 264, 268
Kinnamos, John; 29
Kırk Kızlar tomb, Niksar; 33, 96, 101, 109, 112, 130, 143, 170, 213, 356
Kirşehir; 25, 383
Kitāb fī ma'rifat al-ḥiyāl al-handasiyya; 159, 171, 257
Kızıl Irmak; 240, 377
Knights Templars; 88
Konia (see Konya)
Konya; 6, 9, 11, 13, 15, 17-21, 25, 29, 39, 53, 56, 67, 72, 77, 78, 82-89, 152, 154, 167, 176, 178, 180, 188, 200, 207, 233, 239, 245, 249, 252, 259, 270, 278, 351, 379, 385, 387, 388, 393
Büyük Karatay madrasa; 61, 63, 78, 79, 82, 83, 85, 86, 89, 95, 152, 197, 199, 203, 235, 250
Citadel; 233
Citadel mosque; 78, 245, 289, 347, 385
Citadel mosque north portal; 39, 82, 83, 91, 251, 388
City walls; 20, 388, 389
Hoca Hasan meşcid; 208, 211
İplikçi mosque; 168
Karatay madrasa museum; 203
Karatay madrasa portal; 60, 61, 77, 81, 82, 84, 85, 88
Kılıç Arslān II kiosk; 5, 142, 159, 168, 178-180, 198, 199, 215, 218, 233, 272, 314, 390
Kılıç Arslān II tomb; 117, 205, 347
Sırçalı madrasa; 188
Taş mosque; 50, 51, 58, 68, 69, 71, 73, 75
Taş ve Ahşap Esleri Müzesi; 194, 252
Köse Dağ, Battle of; 154, 187, 396
Kot minaret, Silvan; 149
Kubadabad palace; 218
Kufic; 39, 97, 104, 105, 126, 130, 134, 135, 138, 141, 183, 185, 189, 190, 338, 339, 347, 357, 358, 360, 362, 363
Külük mosque, Kayseri; 32, 46, 55, 61, 68, 71, 73, 75, 387
Külük hamam, Kayseri; 193
kundakari; 85
Kunya Urgench (See Gurganj)
Kurdish; 18, 26, 36
Kurdo-Turkish; 18
Kutalmış ibn Arslān Isrā'īl ibn Saljūq; 11
Sulaymān, son of; 11
Manşūr, son of; 11

Kuyulu Hoca Paşa mosque; 166
Kvatakhevi, Georgia; 295
Kyrgyzstan; 6, 384

L

Lala mosque, Kayseri; 117, 118
Laodikea (Denizli); 28
Larende (Karaman); 21, 26, 379
Laskarids; 21, 169
Laskaris, Theodore, emperor of Nicaea; 2-23, 148
Lashkar-i Bāzār south palace; 284
Latin; 21, 26, 88, 169
lead; 251, 255
lead oxide; 196
Lewon I, king of Cilicia; 19, 21, 23, 26
lime; 207-211, 213, 327
hydrated; 210
mortar; 179, 208, 210, 235, 327
plaster; 213, 215
re-carbonated; 211
limestone; 88, 91, 158, 159, 208, 266, 288
lion; 41, 46, 63, 159, 160, 161, 218, 256, 257, 288, 299, 301, 302, 304, 379, 388
Löytved, H.; 200, 205
Lu'lu'a; 26
Lusignan; 24, 36, 382

M

Ma'arrat al-Nu'mān, Great Mosque minaret; 57, 149
magnesium oxide; 169
Mahayana; 123
Maḥmūd of Ghazna; 134, 284
Malakes; 29
Malatya; 11, 12, 14, 15, 17, 20, 22, 27, 152, 168, 194, 211, 237, 250, 270, 357
amīr of; 384
Great Mosque; 177, 192
Hekim han; 36, 39, 67
Hötüm Dede minaret; 211
Melik Sunullah minaret; 180, 237
al-Malik al-'Ādil; 15, 18, 21, 42
al-Malik al-Mu'azzam, nephew of Şalāḥ al-Dīn; 88
Malik Muḥammad, Dānishmendid ruler; 276
malik; 26, 42, 106, 276, 339
malika; 42
Malikshāh, Great Saljūq sultan; 10
Mama Khātūn tomb, Tercan; 42, 43, 61, 62, 68, 71, 72, 92, 94, 123, 135, 163, 260, 293, 387
Mamlūk; 6, 90, 92, 215
ma'nā (authority); 16
manganese; 203
Manūchihr mosque minaret, Ani; 126
Manuel Comnenus, Byzantine emperor; 13-15
Manzikert, Battle of; 10, 11
maqşūra; 192, 333
Marāgha, Iran; 7, 16, 32, 96, 103, 107, 114, 133, 325, 352, 354, 357, 370, 379, 391, 394, 396
Gunbad-i Kabūd; 7, 97, 130, 141, 325, 352, 353
Gunbad-i Surkh; 7, 97, 101, 314
Round tower; 97, 104

Marand, Iran; 352
marble; 39, 46, 58, 67, 78, 83, 84, 88, 89, 92, 118, 125, 149, 157, 158, 208, 239, 251, 265, 288
Mardin; 125
Marv; 7
Mashhad, Iran; 7
Mas'ūd, Great Saljūq sultan; 16
Mas'ūd, Rūm Saljūq sultan; 9, 13, 17, 17, 22, 254, 276, 277, 388
Mas'ūd III minaret, Ghazna; 144, 184
Matthew of Edessa; 12, 276
Mavrozomēs, Manuel; 19, 21, 386
Mayyāfāriqīn (Silvan); 42, 149, 256
Mecca; 134, 285, 386, 388
Mediterranean Sea; 24, 25, 275, 278, 376
Melik Gazi tomb, Pinarbaşı; 99, 114, 178-180, 187, 208, 354
Melik Sunullah minaret, Malatya; 180, 237
Mengībirtī al-ḥājī al-Akhlatī; 245
Mengücek Gazi tomb, Kemah; 4, 12, 32, 96, 98, 132, 194, 211, 219, 223, 312, 350, 387
Mengüjekids; 12, 13, 20, 25, 30, 35, 38-40, 55, 96, 106, 154, 277, 388, 390
merlons; 47
Mesopotamia; 83, 84, 90, 128, 129, 395
Metropolitan Museum, New York; 201
mica; 209
Michael the Syrian; 9, 15, 276, 383
micritic calcite; 211
Middle East Technical University, Ankara; 42
Miftāḥ al-Ḥisāb; 176, 263
miḥrāb; 31, 39, 55, 56, 67, 82, 83, 85, 117, 128, 141, 149, 177, 187-189, 198, 240, 244, 284, 285, 312, 333, 337, 343, 347, 365, 366, 376, 393
Mīkhā'īl, Great Saljūq; 12
mi'mār; 105, 106, 245
minaret; 5, 8, 16, 35, 38, 46, 91, 96, 99, 122, 123, 125-152, 169, 170, 184, 186, 187, 196, 198, 210, 211, 236, 238, 239, 248, 363, 364, 370, 392
minā'ī; 198-200, 203, 206, 220
minbar; 125, 147, 148, 153, 167, 232, 245, 260, 266, 289, 294, 398
mining; 254
mixovarvaroī; 28
Mleh, king of Cilicia; 16
Mongols; 2, 13, 97, 211, 256, 284, 256, 316, 331, 396
 Conquest; 177, 187, 193, 350
Monreale cathedral, Sicily; 233
moon; 302, 304
Mouchroutas audience hall, Constantinople; 180
mortar; 101, 103, 106, 107, 111, 122, 132, 133, 142, 156-159, 172, 176-180, 188, 197, 204, 208-214, 221-31, 234-236, 251, 263-269, 280, 310-331, 388
Mosul (Mawṣil); 26, 64, 83, 260, 294, 388
Mqargrdzelis; 36, 92, 261
mu'adhdhin; 125
Mubārīz al-Dīn Ertokuş; 376, 377
Mughīth al-Dīn, ruler of Erzurum; 17, 20, 154
Mufaḍḍal al-Aḥwal al-Khilāfī; 42
Muḥammad, (Prophet); 61, 347, 304, 363
Muḥammad ibn Qara Arslān, Artuqid ruler; 258
Muḥammad ibn Khawlān al-Dimashqī; 79, 89, 259

Muḥammad Pahlawān, son of Ildegiz; 16
Muḥyī al-Dīn; 17
Mu'izz al-Dīn; 17, 20
Mu'jam al-buldān; 42
al-mulk; 134, 139, 140, 339, 363
Mu'mina Khātūn tomb, Nakhchivān; 6, 43, 97, 107, 109, 112, 130, 135, 143, 186, 231, 312, 314, 315, 352, 353, 360
muqarnas;
 Brick; 57, 58, 114, 141, 142, 175-180, 186-188, 192, 193, 234, 314, 315, 331
 Stone; 35, 42, 56, 57, 152, 166, 176, 270, 335, 391
muruwwa; 24
Museum für Islamische Kunst, Berlin; 202
al-Muẓaffar Ghāzī, Saltuqid ruler; 174
Myriocephalon, Battle of; 14

N

Nagorno-Karabakh; 260
nails; 250, 254, 269
al-najjār (woodcarver); 166, 245, 294
Nakhchivān; 8, 16, 32, 39, 96, 97, 99, 100, 103, 108, 112, 122, 133, 143, 214, 229, 230, 231, 352, 354, 357, 370, 379, 391, 394
 Gīlān tomb; 98, 106, 113
 Yūsuf ibn Kuthayyir tomb; 6, 96, 99, 102, 107, 108, 111, 137, 223, 227
 Mu'mina Khātūn tomb; 6, 43, 97, 107, 109, 112, 130, 135, 143, 186, 231, 312, 314, 315, 352, 353, 360
naos; 239
namāz; 125
narthex; 261
Nāṣir al-Dīn Muḥammad, Saltuqid sultan; 42
al-Nāṣir Muḥammad ibn Qalawūn, Mamlūk sultan; 90
naskh; 291, 341
Naṣr ibn 'Alī ibn Mūsā, Qarakhānid ruler of Uzgend; 113
 tomb of, Uzgend; 113
Nāwakīya; 9, 11
naẓar; 380
Niẓāmī; 389
Nicaea; 11, 148, 169
 Laskarid empire of; 21, 23, 169
niches; 37, 41, 42, 46, 50, 51, 57, 67-89, 91, 92, 97, 118, 143, 193, 166, 178, 185-189, 192, 288, 291-295, 304, 309-317, 319, 234, 328, 331, 333, 345, 365, 366
Niksar; 12, 20, 108, 110, 112, 113, 122, 123, 147, 277
 Arslān Kutalmış tomb; 117
 Kırk Kızlar tomb; 33, 96, 101, 109, 112, 130, 143, 170, 213, 356
 Yağıbasan madrasa; 274
nisba; 42, 57, 75, 105, 110, 122, 166, 259, 352
Nishāpūr; 7
North Africa; 176
Nūr al-Dīn; 15-17, 276
Nūr al-Dīn hospital, Damascus; 57, 283
Nymphaeum; 169

O

oak; 232, 233, 346
Oburdan mosque, Bukhārā; 242
octagon; 11, 39, 43, 50, 56, 68, 96, 97, 99, 100, 106, 107, 109, 113, 114, 117, 119, 122, 123, 126, 128, 130, 138, 146, 152, 169, 178, 182, 197, 203, 225-227, 288, 289, 293, 324, 335, 376, 377, 393
Oghuz; 9, 10
opal; 209
opus mixtum; 157, 271
Ordubad; 99
Ottoman; 8, 11, 22, 31, 32, 125, 126, 198, 234, 242, 278, 279
Outremer; 393
Oxus; 7, 315
Ozaani, Georgia; 294

P

Pa Minār mosque minaret, Zavāreh; 141
palace; 28, 57, 88, 136, 138, 153, 159, 160, 176, 197-200, 206, 216, 257, 258, 284, 301, 305, 362
palmettes; 260, 358
Pakistan; 141
Palermo; 180, 233
Paphlagonia; 17
Paris; 218
patronage; 2, 3, 6, 21, 30, 36, 38, 40, 68, 88, 92, 153, 154, 166, 179, 192, 193, 204, 267, 272, 287, 347, 380-387, 392
Peripatetic; 77
Persian epigraphy; 338, 341, 357, 384
Persian Gulf; 278
Perso-Islamic; 28, 275, 337, 385
Peshwaran; 339
pilasters; 310, 323, 324
Pinarbaşı; 99, 114, 176, 178-180, 187, 192, 208, 334
pine; 248
Pīr mausoleum, Tākistān; 114, 187, 227, 318
pīshṭāq; 391
plaster; 100, 104, 112, 161, 179, 186, 188, 189, 208-210, 213-218, 224, 229, 234, 248, 268, 312, 314, 315, 323, 327, 358, 362, 369, 380
Podesta; 27, 147
Pontic; 17
 Comnenid state; 24, 278
poplar; 232
potash; 196
pozzolans; 209, 210, 266
primogeniture; 17
pseudo-interlace; 318

Q

Qagans; 113
Qal'at Ṣahyūn, Syria; 56
Qara Arslān ibn Artuq, Artuqid ruler; 258
Qarakhānids; 6, 35, 113, 126
Qarāṭāi; 235
Qarawiyyīn mosque, Fez; 245
Qazvīn, Iran; 187, 188, 315, 331
 Friday mosque; 192, 318
 Haydariyya mosque; 327

qibla; 2, 39, 128, 141, 279, 283-285, 312, 394
quercus hartwissiana; 232
Qumriyya mosque, Baghdad; 142
Qumriyya mosque minaret, Baghdad; 239
Qur'ān; 79, 104, 117, 134, 139, 337, 357, 360, 389
Quraysh Baba tomb, Boyali; 75, 114, 119, 261
Qurva, Iran; 315
 Friday mosque; 315, 317, 318
quartz; 169, 196, 197, 209
Quṭb al-Dīn Malikshāh; 17
Quṭb Minār, Delhi; 139, 140, 144, 184
Quwwat al-Islām mosque, Delhi, 141

R

Ramaḍān ibn Kūnis al-Qayṣarī; 51, 75
rāshidūn; 61
Rāwandī, Muḥammad ibn 'Alī; 193
Raymond IV of St. Gilles, count of Toulouse; 11
Rayy; 11, 20, 123
 Tomb tower; 175
Rhazes; 333
rhombus; 177, 182, 183, 187, 312, 314
ribāṭ; 39
Ribāṭ-i Sharaf caravanserai; 85
Riḍwān; 333
riwāq; 275, 284-286, 310, 311, 320, 323, 324, 328, 332-336, 338, 339, 372, 375
Roman; 136, 159, 233, 234, 254, 271
Roman architecture; 5, 194
Romano-Byzantine; 168, 251
Romanus IV Diogenes, Byzantine emperor; 10
roundels; 61-64, 244, 252, 288, 302, 304, 341
Round Tower, Marāgha; 97, 104
rub; 7
Ruben II, king of Cilicia; 16
Ruisi church, Kartia, Georgia; 63
Rukn al-Dīn Sulaymān II; 25, 42, 383
Rūm Saljūq
 hegemony; 125, 391
 sultanate; 12, 13, 15, 21, 22, 27, 29, 35, 36, 55, 58, 69, 73, 77, 88, 91, 127, 129, 140, 153, 154, 148, 169, 172, 215, 239, 240, 245, 254, 270, 275, 277, 301, 336, 385, 388, 391
Rūmī, Jalāl al-Dīn; 357
Russia; 113, 138

S

Ṣalāḥ al-Dawla Zayn al-Ḥajj Khw[ā]ja Nūshtekīn al-Jamālī; 245
Ṣalāḥ al-Dīn, Ayyūbid ruler; 18, 19, 26, 88
ṣalāt (prayer); 125
salts; 111, 196
Salṭuqids; 20, 30, 35, 39, 42, 126, 135, 277, 387
Samarkand; 62, 242
Samsat; 250
Samsun; 17, 241
sand; 168, 196, 197, 209-213, 264
sandstone; 158, 159, 209
sapwood; 346
Sārabān minaret, Iṣfahān; 144, 176
sarāwīl; 24
sarcophagi; 372

Sarre, Friedrich; 32, 160, 179, 180, 203, 218, 389
Sassanian; 160, 271, 284
Sayf al-Dīn Shāhanshāh, Mengüjekid ruler of Divriği; 13, 39, 40
scaffolding; 101, 142, 232, 239, 248, 264, 266
Se Gunbad, Urmia, Iran; 97
Sebastia (see Sivas)
seismic activity; 58, 125, 235
seismoactive; 58
Seleucia; 25
Selime Sultan tomb, Selime; 113, 114, 119
Senek'erim, king of Armenia; 276
şerefeli; 237, 239
Seyitgazi
 Baṭṭāl tomb; 22
Seyyid Mahmud Hayrani tomb, Akşehir; 238
Ibn Shaddād; 85
al-Shāfi'ī tomb, Cairo; 346
shahāda; 141, 302, 379
Shāh-i Arman; 42
Shāh Fazl tomb, Safid Buland, Farghāna; 384
Shāh-i Mashhad madrasa, Afghanistan; 7, 138, 284, 357, 387, 389
shāh-nāma; 218
Shamanistic; 304
Shams al-Dīn Iluttmish tomb, Delhi; 141
Shapur II; 160
Shaykh Shiblī tomb, Demavend; 176
shibr; 171, 172
Shī'ī; 10
Sicily; 233
Sifistius; 270
Silica; 209
Silvan (Mayyāfārikīn); 42, 149, 256
 Kot minaret; 149
Silver; 26, 106, 199, 301
Simnān minaret, Iran; 85, 176
Ibn Sīnā; 330
Sinop; 150, 347, 384
 Capture of; 23, 146, 272, 275
 walls; 154, 157, 257, 268, 377, 381
Sirçalı madrasa, Konya; 186
Sis; 16
Siirt Great Mosque minaret; 2
Sitte Melik tomb, Divriği; 6, 35, 38, 42, 43, 50, 55, 56, 63, 72, 94, 163, 391
Sivas; 2, 5-7, 12-17, 19, 21, 25, 27, 32, 90, 144, 176, 208, 210, 211, 237, 251, 270, 275-279, 283, 287, 299, 301, 304, 317, 319, 325, 331, 335, 339, 347, 351, 352, 357, 358, 362, 370, 376, 379, 385, 393, 394
 Arkeoloji Müzesi; 128, 217, 279, 308
 Buruciye madrasa; 73, 279
 Çifte Minareli madrasa; 73, 194, 197, 279, 288, 364
 Great Mosque; 4, 125, 128, 147, 208, 242, 277
 Great Mosque minaret; 25, 33, 61, 127-148, 170, 178, 183-186, 189, 197, 210, 211, 213, 239, 312, 362, 370, 392, 394
 Gök madrasa; 73, 193, 251, 285
 'Izz al-Dīn Kay Kāwūs I hospital; 2, 4, 5, 7, 25, 32, 53, 62, 68, 73, 107, 159, 168, 170, 178,

185, 187, 189, 213, 227, 240, 245, 248, 260, 267, 275-380, 382, 384, 386, 392, 394
 'Izz al-Dīn Kay Kāwūs I tomb; 5, 25, 110, 114, 119, 189, 197, 267, 276, 328, 347-378
 Yağlıbasan lodge; 279, 308
Sökmenid dynasty; 166
Sozopolis (Uluborlu); 17, 28
spandrel; 40, 62-64, 78, 79, 82-84, 89, 103, 130, 170, 188, 189, 224, 229, 230, 288, 294, 299, 302, 304, 309, 314, 315, 317, 324, 341, 365, 371
sphinx; 201, 204
spolia; 88, 90, 118, 157, 239, 366, 376, 394
square Kufic; 347, 357, 363
squinces; 114, 146, 192, 370
star vault; 335, 339
stellate; 144, 184, 185, 389
Stepanekurt, Nagorno-Karabakh; 63
stereotomic; 39, 58, 78, 158, 265, 297, 391, 393
Strzygowski, Josef; 5, 30-32, 389
stucco; 35, 55, 57, 200, 210, 218, 220, 266, 294, 295, 315, 363
subfluorescence; 111
Sufi; 23
Sujās, Iran; 331
 Friday mosque; 315, 325
Sulaymān Shāh; 199
Sultan han; 53, 89
al-Sultāniyya madrasa, Aleppo; 82, 83
sun; 84, 264, 301, 302, 304
sūra; 13, 16, 104, 133, 134, 358, 360, 365
sūrat (power); 16
Swabia, duke of; 18
swastika; 85, 369
Syria; 6, 10, 15, 18, 25, 26, 30, 32, 56, 58, 73, 79, 90, 91, 119, 148, 149, 152, 154, 158, 240, 249, 259, 271, 276, 383, 385, 398
Syrian knot; 83
Syrian Orthodox; 15, 152, 158

T

al-Ṭabarī; 333
Ṭabaristān; 105
Tabriz, Iran; 278
Tajikistan; 138, 242
Tākestān; 331
 Pīr mausoleum; 114, 187, 227, 318
ta'liq; 341
tanistry; 17
Taş mosque, Konya; 40, 51, 56, 58, 68, 69, 71, 73, 75
Taş ve Ahşap Esleri Müzesi, Konya; 192, 252
Taşhun Paşa mosque, Ürgüp Damsa; 244
Tārikh-i āl-i Saljūq; 18
taswiyat al-qubūr; 372
Tekesh, Khwārazm Shāh; 20, 154, 316
 Yūnus Khān, son of; 20
 Tekesh tomb, Gurganj; 315, 316, 329
Tepsi minaret, Erzurum; 126, 169, 170, 174, 175, 210, 211
Tercan; 55, 62
 Mama Khātūn; 42
 Mama Khātūn tomb; 42, 43, 61, 62, 68, 71, 72, 92, 94, 123, 135, 163, 260, 293, 387

terracotta; 35, 61, 62, 138, 222, 351, 357
 Teutonic Knights; 21
 Texier, Charles; 220
 St. Theodore; 218
 Third Crusade; 17
thulth; 341
 Tibetan; 128
 Tbilisi; 294, 295
 tie-beams; 232, 235, 239, 249, 269
 Tigris; 256
 Tiled Pavilion Museum, İstanbul; 203
 tin; 255
 tin oxide; 196
 Ṭoġhrīl, Great Saljūq sultan; 9
 Ṭoġhrīl III, Great Saljūq sultan; 20
 Tokat; 17
 Ebul Kasım tomb; 130
 Gök madrasa; 73
 Yağıbasan madrasa; 196, 277
 tools; 159, 207, 216, 217, 222, 223, 250, 254, 259, 269
 Tossia; 17
träger (carriers); 30, 389
 Transoxiana; 113, 350
 travertine; 209
 Trebizond; 24, 171, 278
 treadmill; 248
 tripartite epigraphy; 128, 141, 357, 358
 Tsitsernavank church, Karabagh; 62
 Turkey, Republic of; 5, 6, 30, 31, 32, 97, 396
 Turkish triangles; 216, 370
 Türkmen; 9-12, 14, 17, 18, 22, 26, 158, 276, 304
 Turkmenistan; 7, 315, 350
 Turko-Muslim; 2, 55, 91, 92, 156, 158, 168, 260, 270, 296, 390, 394, 396, 398
 Turko-nationalist; 389
 Turko-Persian; 22, 29
 Türk ve İslam Esleri Müzesi, İstanbul; 161, 218, 255
 turquoise; 100, 109, 110, 130, 134, 138, 139, 142, 179, 182, 184, 186, 188, 189, 196-199, 201, 203, 217, 270, 314, 316, 328, 338, 357, 358, 363, 406, 407
 Tütbeg ibn Bahrām al-Khilāfī; 35, 40, 56
 tympanum; 39, 101, 162, 285, 308, 310, 320, 323, 328, 347, 350, 362, 363

U

ulamā; 154
 Uluborlu (Sozopolis); 17, 28
 'Umar; 61
 'Umar ibn Ibrāhīm al-Ṭabarī; 103, 105, 230
 Umayyad; 22, 153
 underglaze; 136, 196, 197, 328, 372
 Urfa; 125
 Urmia, Iran; 97

Se Gunbad; 97

ustan; 7
ushnān; 196
 'Uthmān; 61
 Uyghur; 123
 Uzgend, Kyrgyzstan; 113, 396
 Minaret; 126

V

Van
 Lake; 42
 Varqa wa Gulshāh; 204
 Varzahan church, Bayburt; 42
 Venetian; 27, 147
 Venice; 27, 347, 350
vihāra; 284
 voussoirs; 71, 72, 73, 83, 84, 91, 288, 291, 320, 324

W

waqf; 36, 287
waqfiyya; 308
 wax; 257

X

X-ray; 256

Y

Yaghī Arslān ibn Dānīshmand; 14
 Ibrāhīm, son and successor of; 14
 Yağıbasan, Dānīshmendid ruler; 13, 276, 277
 Yağıbasan madrasa, Niksar; 196, 277
 Yāqūt al-Ḥamawī; 42
 Yayıclar mosque, Çarşamba; 231, 241, 242
 Yemen; 18
 Yeşilbayır; 53, 72
 Yivli minaret, Antalya; 147
 yurt; 242, 295
 Yūsuf ibn 'Abd al-Ghaffār al-Marghī; 117
 Yūsuf ibn Kuthayyir tomb, Nakhchivān; 6, 96, 97, 100, 101, 103, 107, 108, 109, 112, 113, 138, 225, 229, 230

Z

al-Zāhir, Ayyūbid ruler; 25
 al-Zāhiriyya madrasa, Aleppo; 85
 Zangids; 6, 20, 26, 89, 125, 149
 Zavāreh, Iran; 141
 Zawzan madrasa, Khurāsān; 43, 62
 Zeda Vardzia church, Georgia; 294
 zinc; 255
 Zinciriye madrasa, Diyarbakır; 260
 zoomorphic; 83, 106, 218, 220, 288, 299, 301, 339, 363
 Zubayda; 386